Increasing Opportunities for Physical Activity Participation among those living in Glasgow with a Physical Impairment

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Faculty of Biomedical and Life Sciences

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Julie L. Craik

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Abstract

Physical inactivity is an important public health issue in Scotland with research indicating that the majority of people are not sufficiently active to derive health benefits (Scottish Executive Health Department, 1998). It is therefore widely recognised that there is a need to develop strategies and interventions to enable and encourage people, including disabled people to become more active (Glasgow Healthy City Partnership Physical Activity Forum, 2004; Scottish Executive, 2003b). As those with physical impairments are often cited as being amongst the most inactive of the population the purpose of this study was, through the development of three separate studies, to examine ways in which physical activity opportunities within Glasgow could be increased for those with physical impairments. This was done through the development of three separate studies with differing methodologies.

Study 1 was the evaluation of a pilot programme designed to increase opportunities to participate in physical activity for individuals with physical impairments. Individuals were recruited through the distribution of flyers and data was collected by a variety of means including observation, questionnaires and one to one interviews. Study 2 evolved as a result of some of the findings of the evaluation and examined what health and fitness opportunities were currently available for individuals with physical impairments within the City of Glasgow and critiqued the current gym equipment present within Glasgow City Council leisure facilities. The information used for analysis was gathered through websites, reports and by making contact with key individuals in the field of disability and physical activity. The final study surveyed individuals with physical impairments and parent/carers of people with physical impairments to examine their behaviours, beliefs, barriers and facilitators in relation to physical activity. Individuals and parents and carers were recruited voluntarily through disability and carer organisations.

Having examined the findings from each of these studies there seemed to be four key areas in which work could be undertaken to enable those with physical impairments to become more active, namely, information and education, staff training, equipment and provision of opportunities for physical activity.

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Chapter 1

Introduction

The purpose of this introductory chapter is to outline the current picture regarding Scotland's health and existing Executive policies in an attempt to focus thinking on disabled people and the need to establish equity of opportunity for their health improvement.

Scotland's Health

> "Our position at or near the top of the international "league tables" of the major diseases of the developed world - coronary heart disease, cancer and stroke - is unacceptable and largely preventable"(Scottish Executive, 1999c)

Scotland has traditionally had one of the poorest health records in Europe. While Scotland's health has gradually been improving (Scottish Executive, 2003a)in terms of health outcomes, it has not improved relative to other Western European countries over the past 10 years (Health Scotland, 2004). Death rates as a result of cancer and coronary heart disease are still among the highest in the world (Scottish Executive, 2003a), with estimates suggesting that around half a million Scots have coronary heart disease (CHD) of whom 180,000 require some form of treatment(Scottish Executive Health Department, 2001). These figures however do not reveal the full scale of the problem as they relate only to those who have presented with symptoms. There will be a number of individuals living with CHD who are as yet asymptomatic and thus not included in these figures and a greater number still who will be in the process of developing this condition partly because of their lifestyle behaviours.

Whilst the prevalence of conditions such as CHD gives a good indication of the nation's health, the concept of health is much more complex (Naidoo & Wills, 1994). Defining health as the presence or absence of disease limits the scope for health improvement and strategies for health improvement are thus primarily reactive rather than proactive with an emphasis on treatment rather than prevention. For the health of individuals and

communities to be improved, there needs to be greater understanding of the complexity of issues that can impact on someone's health, e.g. employment and housing, among policy makers and health professionals. Health is a holistic entity of which the presence of disease is just one variable: health incorporates an individual's mental, emotional and social well-being also (World Health Organisation, 1948)

Health Inequalities

Although Scotland's Health as a whole has been described as relatively poor, negative health outcomes are clearly more pronounced among those living in the most disadvantaged circumstances (Scottish Executive, 1999a, 2003a). The recently published *Health and Well-being Constituency Profiles* highlight the spectrum of health inequalities that exist among the best and worst off members of Scottish society (Health Scotland, 2004). These profiles demonstrate that mortality rates as a result of heart disease in the Glasgow Maryhill area are more than double those rates seen in Edinburgh West. In fact men living in Scotland's most deprived areas can expect to die up to 10 years earlier than their more affluent Scottish male counterparts (Health Scotland, 2004)

There are a number of theories for the existence of health inequalities (Health Promotion Policy Unit NHS Scotland, 2002). However the vast majority of research would indicate that socio-economic factors such as income, education and employment and the impact that these factors will have on a person's material environment e.g. their working environment, housing, transport and nutrition are certainly a major cause (Health Promotion Policy Unit NHS Scotland, 2002). In Scotland 19% of all individuals and 25% of all children live in households where the net income is less than half the national average. Scottish Executive Statistics (2005, July 25) **Retrieved July 25, 2005 from http://www.scotland.gov.uk/Publications/2005/03/29170611/06123** However poverty is not the sole determinant; health inequalities also exist between individuals, groups, social classes, races, genders and across geographical locations. Health inequalities manifest themselves in a wide range of health outcomes, including self - reported health measures, objective measures such as death and illness and access to services (Health Promotion Policy Unit NHS Scotland, 2002)

Improving Health: Policies

In light of Scotland's poor health record, the Executive recognised the need to work towards improving the health of the nation and in 1999 published the health improvement white paper 'Towards a Healthier Scotland'. Within the paper the Scottish Executive highlighted that to improve health, lifestyle behaviours - for example smoking - needed to be addressed, while also prioritising specific topics such as sexual health. Whilst the Government clearly acknowledged the importance of this work, it declared that the overarching focus of all health promotion work and the key to health improvement should be to address people's life circumstances through a sustained attack on social exclusion and poverty (Scottish Executive, 1999c)

Tackling Social Exclusion

Social exclusion is the term that is used to encompass a broad range of social problems centred on low income, lack of opportunity, diminished quality of life and degraded environments(Scottish Executive, 1999a). Poor health can lead to social exclusion and prevent an individual from participating within society, however similarly poor health can be a consequence of exclusion and poverty (Scottish Executive, 1999a)

Although there are many different aspects to social exclusion, they all appear to share a commonality. This is the lack of opportunity to participate fully within society, whether that is in work, learning, family life, or leisure. However, whilst increasing the opportunities available to individuals goes some way to tackling exclusion, the solution is far more complex. Often, even when opportunities present themselves, many individuals face a number of additional barriers to inclusion, such as race, drug use, disability and gender, which can make participation all the more difficult (Scottish Executive, 1999a).

In 1999 the Executive published two papers 'Opening the door to a better Scotland' (Scottish Executive, 1999a) and 'A Scotland where everybody matters'(Scottish Executive, 1999b). These papers were the Executive's social inclusion and social justice papers and were designed to build on the recommendation within 'Towards a Healthier Scotland' to tackle social exclusion and life circumstances in order to improve health. The ethos of these papers is the right of everybody to participate fully within society, to have equality of opportunity to reach his or her fullest potential, free from poverty. The social

justice paper recognises that for some this is not always the case and that many within Scottish society suffer persistent injustice. These documents place importance on changing this in order to ensure a fair and equal society for all individuals.

The Executive called for action to be taken to:

- **Promote opportunities**: increase the opportunities available to people
- **Tackle the barriers to inclusion**: tackle the specific barriers that prevent particular groups from participating in society
- **Promote inclusion among children and young people**: improve the prospects of the next generation
- **Build strong communities**: strengthen community life and regenerate and empower communities.

The Executive recommends that social justice should underpin all policies and practice and should be targeted at people throughout their lifecycle wherever they live. They believe that by doing this, social exclusion and life circumstances can be addressed, and ultimately health outcomes can be improved.

Socially Excluded Groups- Disabled People

One group of individuals, who have experienced persistent injustices, is disabled people. For many years disabled people have been unfairly discriminated against in terms of employment, access to services and opportunities to participate fully within society, mainly because Western society has evolved to accommodate the needs and aspirations of predominately non-disabled people.

Physical access to buildings and transport, cost, and attitudes of others can all be barriers to inclusion for disabled people and impact on their ability to participate in economic, social, cultural and leisure activities (Scottish Executive, 1999a). Research carried out in 1999 found that only 12 % of buses had lowered floors, which would make access easier for some individuals (Reid-Howie Associates, 1998). This research also revealed that 35% of railways were inaccessible or partly inaccessible, with only 15% of railways having accessible toilets and only 22% of railway stations having marked parking spaces (Reid-

Howie Associates, 1998). If individuals are limited in their transport options then their ability to access other opportunities may also be restricted.

The Disability Discrimination Act (1995) should go some way to addressing these issues for disabled people. This legislation gives disabled people rights with regards to employment and access to goods and services thus tackling the discrimination faced by them, helping to promote inclusion. It has been introduced in 3 phases, the last of which was implemented in 2004:

Phase I in 1996 made it illegal to treat disabled people less favourably because of their disability.

Phase II in 1999 obliged businesses to make 'reasonable adjustments' for disabled staff, by providing for example, additional support or equipment. They also had to start making changes to the way they provide services to customers, for example issuing bank statements in large print.

Phase III from October 2004 obliges businesses to make physical alterations to their premises to overcome access barriers.
Disability Discrimination Act by Disability (2004, March 20) **Retrieved March 20, 2004, from** http://www.disability.gov.uk/dda

It seems astonishing that it has taken until 2004 for these issues to be fully addressed. However, society's failure to accommodate the needs of disabled people at this basic level for so long is perhaps attributable to the way that 'disability' has been viewed/defined until more recently.

Models of Disability

Over the years a number of models have evolved in an attempt to define disability and ultimately enable governments, policy makers and society to devise strategies that will meet the needs of disabled people. As with most models that try to define a concept, no one model should be used in complete isolation as each has its own merits and drawbacks. However the models of disability do differ in their approach and therefore the context of

the term disability changes significantly depending on which model is applied, as do the implications for disabled people themselves.

The models are generally shaped by two underpinning philosophies:

- That disabled people are dependent on society (medical model)
- That disabled people are customers of what society has to offer (social model).

Using the first of these approaches to the issue of disability can lead to segregation, discrimination and social exclusion, whilst the second moves away from focusing on pathology and thus fosters choice, empowerment, equality of human rights and integration.

The medical model of disability, which has traditionally dominated policy formation, is based on the first of these philosophies. It identifies the impairment as being the problem, where impairment is defined as any loss or abnormality of psychological, physiological or anatomical structure or function. In this context disability is therefore defined as the resulting effect that any loss/abnormality has on an individual.

Whilst this approach does have some merits and has led to significant medical/technical and orthotic advances, defining disability in this way does little to challenge stereotypes and empower disabled people to take responsibility for decision making for themselves.

Because of this, disabled activists have fought for a change in this approach, calling for a definition of disability that does not assume that having an impairment automatically result in exclusion. Rather they want a definition that takes account of the role that physical and attitudinal barriers play in excluding disabled people.

In 1981 the Disabled People's International defined disability as

> 'The loss or limitation of opportunities that prevents people who have impairments from taking part in mainstream life of the community on an equal level with others due to physical and social barriers'.

This definition is the foundation of the social model of disability and therefore differs considerably from the medical model, as the social model approaches disability from a very different starting point. It seeks to eliminate the social processes that create disadvantages for people. Whilst it does not wish to deny the existence of impairments, it recognises that for many people these impairments will be a constant in their lives. Therefore rather than looking for ways of 'curing' or 'normalising' the person, the social model emphasises that, for individuals to access similar opportunities and experiences, society needs to recognise, accept, change and adapt to an individual's impairments so that disabled people can take part fully in society.

Given that the social model of disability defines disability as the set of barriers that society has created which restrict disabled people's equality of opportunities, it makes little sense to talk about 'people with disabilities' When talking about a person's medical condition or health problem the social model of disability would encourage the use of the term impairment e.g. someone with a physical impairment.

The problem facing the social model however is that as the population gets older, the number of people with impairments will rise and society may struggle to adapt at an appropriate rate. However the social adapted model, builds from the social model whilst incorporating elements of the medical model. It emphasises that whilst currently not all problems of impairment can be addressed, in order for disabled people to be enabled to achieve their potential, it is important that our environment is recognised as discriminatory and that as much as possible is done to change it. **Retrieved April 18, 2004, from http://www.akmhcweb.org/ncarticles/models_of_disability.htm**

Improving lifestyle behaviours

Although tackling social exclusion and poverty as a means of health improvement is the main recommendation detailed within 'Towards a Healthier Scotland', it also outlines the need to address lifestyle behaviours e.g. smoking, nutrition (Scottish Executive, 1999c)

Health Promotion is the vehicle by which much of the work around inequalities and lifestyle behaviours is tackled. The value of Health Promotion lies in its integrated approach. Health Promotion enables and empowers individuals to take greater

responsibility for their own health, and, by ensuring sustainability, maximise their health potential (Naidoo & Wills, 1994, 2000). Whilst the fields of Health Promotion and Health Improvement are ever expanding, until recently health promotion programmes looking at improving the lifestyle behaviours of disabled people have been relatively neglected (Rimmer, 1999)

Health and health promotion for disabled people

The expected lifespan for many disabled people has increased due to advancements in medical technology over the past 30 or so years. (Rimmer, 1999; Rimmer & Braddock, 2002; Sutherland, Couch, & Iacono, 2002). Despite increases in longevity, however, little attention has been paid to how individuals' quality of life could be improved through improving health behaviours (Hogan, McLellan, & Bauman, 2000; Rimmer, 1999, 2002; Stuifbergen, 1997).

The apparent neglect of health professionals in devising health promotion strategies for disabled people is partly a consequence of the medical model used to define disability for many years and the narrow definition of health used by some practitioners and policy makers. If health is viewed as merely the absence of disease, then many disabled people will be viewed as being able only to experience poor health. If disabled people are not viewed as being able to experience wellness, good health or quality of life then it is unlikely that resources will be spent devising health prevention, maintenance or promotion strategies for these individuals (Rimmer, 1999; Sutherland et al., 2002) despite evidence suggesting a growing need.

Coyle (2000) cites findings from a national study in the US, which found that women with disabilities reported higher occurrences of urinary tract infections, heart disease, depression and osteoporosis than non-disabled women. Additionally, within Coyle's paper, she cites data from a study of adults with physical disabilities living in rural settings in which 97% of adults experienced limitations from secondary conditions, with those adults who took part experiencing on average 13 different secondary conditions in one year(C. P. Coyle, Santiago, Shank, Ma, & Boyd, 2000).

It is worth remembering that health is not a static entity. Individuals, including those with impairments, can shift on a continuum between good and bad health at any point.

Secondary conditions such are heart disease are largely preventable, and there is increasing recognition of the role that health related behaviours such as diet, physical activity, smoking and alcohol consumption have as determinants of premature and preventable morbidity and mortality. Hogan (2000) cites a study which found that school - attending young people with congenital and physical impairments were less active and had poorer eating habits, in addition to having higher rates of psychosomatic symptoms such as feeling dizzy, than non-disabled peers. The study cited by Hogan concluded that Canadian Young people with disabilities were at significant risk of developing secondary conditions or additional disabilities including heart disease and stroke thus reinforcing the need for interventions addressing health behaviours amongst disabled people (Hogan et al., 2000).

Physical activity

One of the key national 'lifestyle' priorities identified within 'Towards a Healthier Scotland' was the need to increase levels of physical activity participation within the Scottish population (Scottish Executive, 1999c)

Physical inactivity is currently a major problem within Scotland. (Scottish Executive, 2003b). The Scottish Health Survey (1998) showed that the majority of people in Scotland are not active enough, with 72% of females and 59% of males taking insufficient physical activity to derive health benefits (Scottish Executive Health Department, 1998). Worryingly, this trend appears to start at school with approximately 27% of boys and 40% of girls, not meeting the recommended levels of physical activity (Scottish Executive Health Department, 1998).

The scale of physical inactivity in Scotland, with approximately two thirds of the adult Scottish population inactive, makes it an important public health issue, as the health implications are vast. Physical inactivity has been shown to:

- Increase an individual's risk of developing CHD (Twice as likely as someone who is active)
- Increase blood pressure (BP) which in itself is a major risk factor for CHD
- Increase an individual's risk of developing colon cancer (3.6 times higher than someone who is active)

- Increase an individual's risk of developing type II diabetes (regular activity can reduce the risk by 50%)
- Lower bone density putting individuals at greater risk of developing osteoporosis leading to fractures
- Increase the risk of an individual becoming overweight or obese
- Put individuals at risk of experiencing more injuries and accidents

(Scottish Executive, 2003b; Surgeon General, 1996)

In an attempt to tackle the declining levels of physical activity among those living in Scotland, within 'Towards A Healthier Scotland' the Government called for the creation of a National Physical Activity Task Force. The role of this task force was to develop a National Physical Activity strategy for Scotland. This was actioned, and the Strategy was published in February 2003.

Within the National strategy the physical activity task force highlight the potential health and economic benefits of reducing the number of inactive individuals in Scotland by 1% each year for the next 5 years. Using a model similar to those in other countries, the task force estimated that the number of deaths as a result of physical inactivity would decrease by 157 per annum, with economic associated benefits of around £85.2 million. In addition, yearly hospital admissions for CHD, colon cancer and stroke will fall by around 2,231 cases and possible savings to the NHS as a result could be around £3.5 million (Scottish Executive, 2003b)

As the benefits are significant, the need to promote more active lifestyles as a means of health improvement has since been further advocated within 'Improving Health in Scotland-The Challenge' (Scottish Executive, 2003a). Locally, Glasgow's Physical Activity Forum has developed a physical activity strategy for Glasgow. This sets out to ensure that the National strategy becomes embedded within community planning in Glasgow and will encourage concerted and coordinated action to increase physical activity levels among people in Glasgow (Glasgow Healthy City Partnership Physical Activity Forum, 2004).

However, whilst there is a large volume of research evidence of the benefits of physical activity and levels of participation, the majority of studies have failed to include disabled people (Rimmer, 1999). The evidence that does exist would suggest that disabled people are generally more sedentary than non-disabled individuals (C. P. Coyle & Santiago, 1995; C. P. a. K. Coyle, W.B., 1990) and are therefore potentially at greater risk of developing conditions associated with physical inactivity.

Both the National physical activity strategy and the consultation draft of Glasgow's local physical activity strategy recognise that currently there are inequalities in physical activity participation amongst the national and local population. Both documents highlight that, in addition to increasing the activity levels of the population as a whole, there is a definite need to ensure these inequalities are tackled(Glasgow Healthy City Partnership Physical Activity Forum, 2004; Scottish Executive, 2003b).

Purpose of the study

If the Government's vision of improving health, tackling inequalities and promoting social justice is to be realised, then work needs to be done locally to increase opportunities for disabled people and identify what barriers to inclusion currently exist. Physical activity has been identified as an effective means of tackling poor health in Scotland, but despite the plethora of evidence outlining the benefits, disabled people appear to be even less active than their non-disabled counterparts. Using the health improvement and social inclusion agenda as the rationale, the purpose of this research is to explore ways in which physical opportunities for those living in Glasgow with a physical impairment could be increased.

Chapter 2

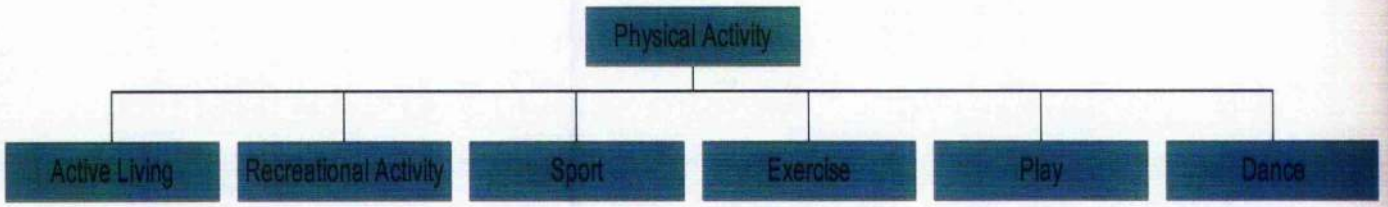
Literature Review

Defining physical activity

In order to understand the issues relating to physical activity participation, it is important first to have a clear picture of what is meant by the term. Often physical activity and exercise are used interchangeably when people are active. Whilst the two are linked, there are subtle differences which allow distinctions to be made.

In 1985 physical activity was defined as 'any bodily movement produced by skeletal muscles that results in caloric expenditure (Caspersen, Powell, & Christenson, 1985). This work also outlined exercise as being a subcategory of physical activity, in which the activities are much more structured, planned and repetitive (Caspersen et al., 1985)Physical activity is thus a general term encompassing a range of activities from walking or cleaning to swimming or jogging. It can be undertaken as part of occupational activity or leisure activity pursuits. The spectrum of activities encompassed by the term physical activity are illustrated in figure 2.1

Figure 2.1 Illustration of the activities encompassed by the terms physical activity



(Scottish Executive, 2003b)

Given the broad spectrum of activities encompassed by the term, assessing the levels of physical activity being undertaken by members of the population can prove difficult because not all are structured or occur as part of planned activity(Heath & Fentem, 1997).

Assessing levels of physical activity

Physical activity epidemiology studies are generally concerned with the following

- The association of physical activity in relation to disease outcomes
- The factors influencing physical activity behaviours and the number of people participating
- The interrelation of physical activity participation with other behaviours

(Caspersen, 1989)

Methods chosen by those gathering data may include surveys, self reported questionnaires, interview administered questionnaires (Heath & Fentem, 1997), physical fitness, job classification, doubly labelled water, heart rate monitoring and electronic monitors (Caspersen, 1989), recall questionnaires, activity dairies or qualitative histories. Although the methods all provide information about physical activity each has particular limitations which means that deciding which is the most appropriate method to use is difficult (McDonald, 2002). For studies seeking to gather data about large segments of the population, surveys are generally the preferred method as they can target large numbers of people with relative ease, at low cost, and can generate large amounts of data (Robson, 1993). Using tools such as activity diaries and recall questionnaires over a short period of time to gauge overall activity levels among disabled people may be even more difficult than in the general population. Many disabled individuals may experience intermittent health problems, which may interfere with their regular participation in physical activity making it harder to get precise and accurate measures (Heath & Fentem, 1997).

Most of the tools used to measure activity levels have been developed and validated with non-disabled people only, and therefore are not perhaps appropriate to use with disabled people. Many of these tools fail to encompass the broad range of activities the term physical activity encompasses and thus tend to focus on activities that often have no bearing on the lifestyles of disabled people. Therefore these tools do not ask individuals about activities of daily living (ADL) such as personal care activities for example bathing and dressing. Nor do they take account of instrumental activities of daily living (IADL) such as those relating to independent living for example shopping, or preparing meals. For some individuals these activities may be the maximum levels of activity they can manage

as they may require them to expend far greater levels of energy than a non-disabled person and thus such activities are important to measure. Consequently, because there are few validated reliable tools at the disposal of those trying to assess physical activity levels among disabled people, those studies that have made assessments may not truly reflect individuals' activity levels. It is difficult as a result, to make accurate comparisons between the levels of activity undertaken by disabled and nondisabled people (Heath & Fentem, 1997) and to establish baseline data from which to make recommendations. There has been recognition of the need for tools designed specifically to measure activity levels among disabled people (Heath & Fentem, 1997; Rimmer, Riley, & Rubin, 2001; Washburn, Zhu, McAuley, Frogley, & Figoni, 2002).

Tools for measuring physical activity among disabled people

Because of the increasing need for reliable information about the activity levels of disabled people several individuals have tried to develop tools that could be used for this purpose (Rimmer et al., 2001; Washburn et al., 2002). Rimmer and colleagues decided to devise a tool to include less structured activities that would reflect the activities performed by disabled people. The tool comprised of the following 3 subscales:

1) Exercise 2) Leisure time physical activity 3) Household activity

A cross sectional design was employed to assess the internal consistency, reliability and validity of this tool. In addition a two (health promotion programme v's control) by two (pre vs post) factorial design was used to assess the ability of the tool to detect changes in physical activity before and after a health promotion intervention with disabled people.

The results generated were positive and did suggest that the tool, which was named the Physical Activity and Disability Survey (PADS), could provide reliable and accurate information about the physical activity behaviours of those with impairments or chronic health conditions. The authors did note however, that there were limitations to this study because the sample was quite unique:

- All were participating in a 3-year federally funded intervention aimed at reducing secondary conditions.
- Most participants' primary disabling conditions were stroke or type II diabetes.

- The vast majority of participants were female and African American.

Because the sample comprised mainly African American women with mainly two specific impairments, it is difficult to generalise the findings to suggest that the tool would have equal reliability and accuracy if the study were carried out with a more diverse disabled population. The authors recommended that whilst the tool was useful and did provide accurate data, further research was needed with a larger more heterogeneous group in order to refine the tool.

A year later Washburn et al (Washburn et al., 2002) published a study in which they developed and evaluated a physical activity survey to assess physical activity levels amongst disabled people. However Washburn's tool, named the Physical Activity Scale for Individuals with Physical Disabilities (PASIPD) is specifically for use with individuals with a physical impairment. Like the PADS, the PASIPD tries to establish an individual's participation in a variety of activities from recreational activity to housework. Washburn et al concluded at the end of their study that they had developed 'an instrument designed to measure physical activity in individuals with physical disabilities and provided preliminary support for its construct validity.' There were some limitations to their study in that the response rate was fairly low (35%) and those who participated were relatively affluent and predominately white, which means that, like the PADS, the findings may not be applicable to a more diverse and perhaps less well educated group. Unlike Rimmer's PADS tool, the PASIPD however was not validated against an external criterion, therefore the accuracy of this tool was not assessed.

Activity levels among disabled people

The lack of reliable and appropriate tools in the past has meant that the data about activity levels is limited. The data which does exist would suggest that habitual activity is a missing component from the lives of most disabled people, and that disabled people are less active than the general population (Cooper et al., 1999; Heath & Fentem, 1997; Messent, Cooke, & Long, 1998; Rimmer, 1999; Rimmer, Braddock, & Pitetti, 1999; Santiago & Coyle, 2004; Taylor, Baranowski, & Young, 1998).

Activity levels among people with a physical impairment

Individuals with physical impairments have been identified as among those least likely to adopt and maintain a physically active lifestyle (Seefeldt, Malina, & Clark, 2002; Taylor et al., 1998)

Coyle and colleagues (1990) studied the leisure characteristics of adults with physical impairments and found that in their study group of 790 adults, individuals' favourite pastimes comprised mainly activities that occurred inside the home, requiring little physical skill or social involvement and generally sedentary, such as television watching and reading (C. P. a. K. Coyle, W.B., 1990). The findings by Coyle do not differ significantly from preferred leisure activities identified by non-disabled people (C. P. a. K. Coyle, W.B., 1990; Salmon, Owen, Crawford, Bauman, & Sallis, 2003). However what Coyle and colleagues found concerning was that for disabled people, the degree of isolation experienced when participating in leisure activities was replicated in other areas of their lives, for example isolation due to unemployment. Therefore individuals were experiencing greater exclusion and not the integration and inclusion that is strived for.

Looking more specifically at particular physical impairments Ng and Kent-Braun (1997) found that individuals with multiple sclerosis were less active than sedentary but otherwise healthy, age and gender matched, control subjects. Although the numbers participating in the study were relatively small (n=17 MS patients and 15 sedentary controls), the authors were able to conclude that, based on their findings, individuals with multiple sclerosis were indeed less active than healthy sedentary controls. In addition to having implications with regards to general health, the authors of this study were also concerned about the implications these findings had with regards to the levels of physical functioning and symptoms of MS such as fatigue.

In contrast, in a more recent study carried out by Slawta et al (2003), of the 123 women taking part in their study 65% regularly participated in light-moderate intensity activity, 10.6% in vigorous intensity activity (Slawta et al., 2003). Although these findings contradict Ng and Kent-Braun's findings, the authors do offer explanations for this, one of which relates to the use of accelerometers. In the study performed by Ng and Kent-Braun a 3dimensional accelerometer was used to quantify physical activity which Slawta indicates

is a more precise measure than qualitative measures. Indeed an additional finding in Ng and Kent-Braun's study was that, in terms of methodology, using an accelerometer was preferable to using a 7-day recall questionnaire when comparing relatively inactive groups of individuals. Therefore it could be suggested that had Slawta used accelerometers, the findings might have been different.

Whilst the above studies indicate that among those with physical impairments levels of physical activity are low, it is worth remembering that within the general population there are subsets who tend to be less active than most e.g. women and those from minority ethnic backgrounds. Given that the evidence as a whole is limited with regards to participation levels among disabled people, it is perhaps too early to draw conclusions about differences between disabled populations in terms of gender and ethnicity. More research is needed about disabled people generally and of specific subsets of the disabled community in order to gain a clearer picture of the issues.

In 1999 Rimmer (Rimmer, Rubin, Braddock, & Hedman, 1999) examined the physical activity patterns among those with physical impairments, more specifically, minority women with physical impairments. After surveying 50 African-American women with severe physical disabilities Rimmer et al found that only 8.2% of their sample participated in leisure-time physical activity and only 10% engaged in aerobic activity three or more days a week for at least 15 minutes. Unstructured activities such as gardening, housework or shopping were nearly absent.

As with the other studies outlined (C. P. a. K. Coyle, W.B., 1990; Ng & Kent-Braun, 1997) above, Rimmer's study reiterated the high levels of inactivity among those with a physical impairment. The literature that outlines the negative health outcomes associated with physical inactivity is well established. It is therefore assumed that disabled people should be encouraged to increase their levels of physical activity participation where possible in order to protect their health and autonomy (Cooper et al., 1999; Durstine et al., 2000; Rimmer, 1999)

Benefits of disabled people being more active

Compared to non - disabled people there is less detailed evidence outlining the exact benefits of physical activity and how much activity is required to elicit any potential

benefits among individuals with particular impairments (Cooper et al., 1999; Durstine et al., 2000). In fact to date no studies have been conducted to determine whether the benefits non-disabled people derive through regular participation are equally applicable to disabled people.

Whilst it is easier in some ways to talk about disabled people collectively, they are not a homogeneous group and therefore it is difficult to generalise about the benefits of physical activity participation. For each type of impairment there are differing implications/considerations and physiological responses to physical activity participation and the evidence that does exist may not be applicable to the diverse range of impairments that disabled people experience. Durnstine and Rimmer (Durstine et al., 2000; Rimmer, Braddock et al., 1999) make the point that currently devising recommendations is difficult because the literature that does exist is limited in the following ways:

Design

Primarily most of the studies have been designed with a medical focus and are therefore not necessarily interested in exercise outcomes. The design and methodology is therefore varied making it hard to draw clear recommendations/guidelines

Subject selection

The ability to generalise results is often limited because only the most stable of subjects are included in studies. Few studies include those with multiple impairments or pathologies.

Standardised testing and procedures

These are often not included into the design of such studies.

Despite the limitations in evidencing the benefits and thus devising recommendations, it is generally felt that disabled people can benefit from regular physical activity participation (Cooper et al., 1999; Heath & Fentem, 1997; Rimmer & Kelly, 1991; Sutherland & Andersen, 2001; Sutherland et al., 2002). Although it is unlikely these benefits will completely restore the capacity lost through disease or damage, it is anticipated that a physical activity programme targeting disabled people will be able to maintain or improve individuals' inactivity risk factors, physical function and hence independence.

Listed below are some of the benefits that disabled people may be able to derive from participation. However when considering them it is worth remembering the limitations as outlined above and that at times these findings relate only to specific impairments.

Improved cardiovascular health

Higher rates of physical fitness appear to provide a protective mechanism against all cause mortality, primarily by lowering rates of cardiovascular disease (Blair, 1989). The cardiovascular health benefits of participating in physical activity are well documented among non-disabled individuals (SurgeonGeneral, 1996) with those with lower levels of fitness being twice as likely to die at any age than those who are moderately fit.

As disabled people are generally more sedentary, the risk to cardiovascular health may be far greater. Evidence would certainly suggest that poor cardiovascular health is increasingly problematic for individuals with specific impairments. For example coronary heart disease and cardio pulmonary disease have emerged as a major cause of death and morbidity among individuals with spinal cord injuries (Brenes, Dearwater, Shapera, LaPorte, & Collins, 1986; Jacobs, Nash, & Rusinowski, 2001) and similarly individuals with cerebral palsy (Rimmer, 2001).

Some research has been carried out into the cardiovascular health benefits individuals with spinal cord injuries can derive from physical activity. There is no direct evidence to confirm that physical activity can positively affect coronary heart disease morbidity among individuals with spinal cord injuries (Washburn & Figoni, 1999) however, there is some evidence to imply that it may help to modify some of the risk factors associated with coronary heart disease such as blood lipid profiles (Brenes 1986) and serum insulin levels (Washburn & Figoni, 1999).

In terms of improvements to blood lipid profiles, High Density Lipoproteins (HDL) have been shown to offer some protection against the development of coronary heart disease. Individuals with spinal cord injuries commonly have elevated total cholesterol and Low Density Lipoproteins (LDL) and low levels of High Density Lipoproteins (HDL). Brenes et al (1986) noted that compared to inactive individuals with spinal cord injuries (SCI), those individuals with SCI who were more active had higher levels of the high-density lipoproteins and lower levels of total cholesterol. This suggests that physical activity may

help to improve the blood lipid profiles and thus modify cardiovascular risk factors. Indeed Brenes et al (1986) showed that the levels of HDL among wheelchair athletes were similar to those found among non-disabled active individuals, although the exact mode, frequency, duration and mechanism for this improvement has not been clearly identified (Washburn & Figoni, 1999). Further evidence to support the theory that disabled people may experience improved HDL levels as a result of physical activity comes from Winter et al who cites a small study in which 8 individuals (4 men, 4 women) with spinal cord injuries experienced 20% increase in their HDL-C levels following 8 weeks of wheelchair ergometery.

The above evidence does suggest a role for physical activity in improving lipid profiles of those with spinal cord injuries. Although the study cited in Winter et al gives an indication of the amount of activity that has been successful in bringing about improvements in blood lipid profiles, the numbers taking part were small and there is no way of knowing whether lesser activity would have had the same effect. It is also worth noting that in a study by Apstein et al (Apstein & George, 1998) to examine serum lipids in the first year following spinal cord injury, physical activity could only account for approximately 44% of the increases in HDL levels. They postulated that changes in lipid metabolism and serum lipid levels were most likely influenced by interruptions to the autonomic nervous system. Winter cites another study in which it is suggested that it may in fact be adiposity that correlates to unfavourable lipid profiles in persons with spinal cord injuries. Given the findings from these latter two studies, therefore, it may be difficult at this stage to state conclusively what the role of exercise is in terms of improving blood lipid profiles in people with spinal cord injuries. Changes in lipid profiles have also been identified in active individuals with visual impairments and rheumatoid arthritis (Heath and Fentem), although, given that the physiological response to physical activity is unlikely to be different to that experienced by non-disabled people, this finding is not necessarily surprising.

Slawta (2002) has also demonstrated potential benefits to cardiovascular health from physical activity participation. The risk of coronary heart disease is in part associated with greater abdominal fat, higher levels of triglycerides, lower levels of high density lipoproteins and reduced insulin sensitivity (Slawta et al., 2002). In 2002, Slawta et al compared these indices between active and inactive women with multiple sclerosis (Slawta et al., 2002). What they found was that women participating in low-moderate intensity

leisure time activities had significantly lower waist circumferences, triglyceride and glucose levels relative to inactive women and thus regular physical activity may help to reduce the risk of developing coronary heart in individuals with multiple sclerosis. Although in 2003 Slawta et al concluded that women with MS were at no greater risk of developing coronary heart disease than the general population, because they were no more likely to be inactive, they did emphasise that physical inactivity is a major risk factor for coronary heart disease. They concluded that individuals with more advanced multiple sclerosis who begin to become less active should be encouraged to continue to be active within the limitations of their impairment.

In Slawta's 2002 study, the benefits were greatest amongst those doing higher levels of activity, but improvements were also seen in those participating in low-moderate intensity physical activity relative to those not doing anything at all. This is a positive finding as it suggests that this lower level of activity, which is likely to be more achievable for individuals, may equally bring about health benefits (Slawta et al., 2002).

Improved cardiovascular fitness and ability to maintain activities of daily living

Disabled individuals often have insufficient cardiovascular fitness to allow them to maintain activities of daily living or instrumental activities of daily living. A study of healthy young persons with paraplegia noted that only 25% had upper extremity peak oxygen consumption, which was only marginally sufficient to carry out daily tasks (Noreau & Shephard, 1995). Additionally, reports frequently cite that individuals with learning difficulties have low levels of cardiovascular fitness (Messent et al., 1998), with some suggesting that many of these individuals have fitness levels comparable to someone 30-40 years their senior or someone who has had a heart attack (Rimmer, 1996). For individuals with Cerebral Palsy, although the degree of damage to the brain does not worsen over time, often their level of mobility and independent functioning deteriorates. An Introduction to Cerebral Palsy and Aging by Scope (2004, March 17) **Retrieved March 17, 2004, http://** www.scope.org.uk

Physical activity has been shown to be beneficial as a means of improving cardiovascular fitness among non - disabled people (Surgeon General, 1996) and some disabled people (Cowell, 1985; Fernhall, 2000; Santiago, 1993; Fujitani, 1999; Jacobs, 2001). The ability to carry out day to day tasks can be negatively influenced by even the smallest decrease in

stamina. There is also evidence to suggest that some individuals are able to maintain activities of daily living through regular activity participation (Damiano et al, 1995) because of the improvements it can elicit in terms of muscle strength, endurance, balance, cardiovascular, and respiratory efficiency (Rimmer, 1999). Thus one significant benefit of increased cardiovascular fitness through physical activity participation is its potential to enhance individuals' quality of life by helping to preserve functional capacity, freedom and independence.

Increased muscle strength

Loss of muscle strength, muscle weakness and poor functional ability are commonly cited problems among disabled people (DeBolt & McCubbin, 2004; McDonald, 2002; Rintala, Kettunen, & McCubbin, 1996). The relationship between physical functioning and physical activity is a reciprocal one (Rimmer 2005); decreased cardiovascular fitness results in a decrease in muscle strength leaving individuals with lowered functional capacity. This in turn results in less participation leading to greater loss in muscle strength and further impaired functioning.

Sutherland et al (2002) cites several studies that indicate that individuals with lower functional skills are more likely to have reduced life expectancy when compared to those with higher levels of functioning. Therefore strategies which aim to enable individuals to maintain or increase their levels of physical function and independence are important.

The evidence available suggests that for certain impairments, participation in physical activity can lead to increased muscle strength (DeBolt & McCubbin, 2004; Dodd, Taylor, & Damiano, 2002; Jacobs et al., 2001; Rimmer, Nicola, Riley, & Creviston, 2002). With regards to arthritis, controlled clinical trials have shown that participation in physical activity can increase the range of movement, flexibility, muscle strength, power and endurance in individuals (Marian A Minor & Lane, 1996). Physical activity can also help to improving gait and pain control for those with arthritis (Ettinger, Burns, Messier, et al., & Sharma, 1997; Hakkinen, Tuulikki Sokka, Antero Kotaniemi, & Hannonen, 2001; Lyngberg, Danneskoild-Samsoe, & Halskov, 1988; M.A. Minor, 1989).

Improved weight management

Because disabled people are generally more sedentary than non-disabled individuals they are therefore at greater risk of being overweight and obese. Indeed in 1998 Messent et al noted that obesity was a problem among adults with learning difficulties and indicated that this may in part be due to high levels of inactivity among this population (Messent et al., 1998). Weil et al (Weil et al., 2002) similarly noted the prevalence of obesity among adults with physical and sensory limitation and serious mental illness was higher among than among non - disabled people (24.9% were obese v's 15.1%). Those who had some or severe lower extremity mobility difficulties were more likely to be at risk and also less likely to attempt to lose weight than non-disabled individuals.

In addition to putting individuals at risk of developing secondary conditions such as coronary heart disease, being overweight can further compound the level of disability experienced by individuals consequently leading to further inactivity and ill health. Obesity has been shown to lead to the development of osteoarthritis of the knee and also has a role in increasing pain and impairment once it has developed (Rejeski 2002).

The evidence available indicates that physical activity promotes fat loss and significantly reduces the risk of diseases associated with upper body fat distribution such as CAD, diabetes and hypertension (Surgeon General, 1996). Therefore in terms of benefits to disabled people, physical activity participation has the potential to reduce individuals' weight, which in turn may impact on individuals' level of mobility and function, and minimize the risk of developing secondary conditions associated with obesity and inactivity. Messier et al (2002) found that older, obese adults with knee osteoarthritis reported improvements in both self-reported disability and functional limitations as well as increased walking stride length when they were part of a diet and physical activity intervention programme.

Reduce social isolation

Lack of opportunity to participate fully within society is the main contributing factor to creating social isolation (Scottish Executive, 1999) and therefore disabled people are often amongst the most socially excluded groups within society (Coyle, 1990; Scottish Executive, 1999; Department of Health, 2001).

Regular physical activity has been reported to provide individuals with the opportunity to develop new friendships and social support networks (Shephard, 1991), especially in group settings where co-operation with other individuals is promoted (Bluechardt, Wiener, & Shephard, 1995). Following a spinal cord injury, individuals can sometimes find it difficult to integrate and participate to the same extent as before within their community(Judd, Brown, & Burrows., 1991). Research has shown that social contact, support and group integration, have a beneficial effect on the health of those with spinal cord injuries (Benony et al., 2002) and should thus be promoted. Therefore another potential benefit of physical activity participation is that it has the potential to create opportunities for societal participation, for meeting new people, socialising and having fun.

Decrease depressive symptoms

Coyle et al (2000) states concern about the prevalence of psychological difficulties experienced by people with a physical impairment. Coyle et al (2000) cite two studies highlighting the levels of depression amongst those with a physical impairment. One of these studies found that, among a large sample of people with a physical impairment living in Canada, 35% had major depression. The other study cited by Coyle found that 46% of their sample of adults with physical disabilities were at risk of a clinically depressive episode.

The above studies reflect levels of depression among a broad spectrum of impairments, however there is equally concerning data with regards to poor mental wellbeing amongst those with specific impairments including multiple sclerosis (Petajan & White, 1999) and spinal cord injuries (Benony et al., 2002; Judd, Burrows, & D.J., 1986; Krause, Kemp, & Coker, 2000).

Physical activity has been shown to be beneficial in reducing symptoms of mild- moderate depression (Martinsen, 1990; North, McCullagh, & VuTran, 1990) and anxiety among non-disabled people (Scully., J., Meade., Graham., & Dudgeon., 1998), and there is increasing recognition that moderate intensity activity can have a positive effect on the psychological wellbeing among disabled populations (C. P. Coyle & Santiago, 1995).

In 1987 Macdonald, Neilson and Cameron found that there were differences in the physical activity participation among individuals with spinal cord injuries who were depressed and those who were not. Those who were more physically active had fewer depressive symptoms. Whilst the authors indicated that increasing physical activity levels amongst individuals with spinal cord injuried might be useful in the treatment and prevention of depressive symptoms it should be noted that it the differences in depressive symptoms could have resulted in the differences in activity levels.

However data from elsewhere would suggest a positive effect of exercise on depression levels(C. P. Coyle & Santiago, 1995), and indeed Coyle et al (1995) reported benefits to mental wellbeing as a result of physical activity participation amongst those with physical impairments. Following 12 weeks of aerobic exercise individuals with physical impairments experienced increases in fitness and a mean reduction of 59% in depressive symptomology whilst the control group experienced a 6% increase in these symptoms with a lack of significant change in the other psychosocial variables. It should be noted that these benefits were observed among a small sample of individuals (n=7) all of whom had volunteered to participate in the exercise groups. It could therefore be postulated that the willingness of this group to exercise could have affected the findings and thus this study should be repeated with larger numbers of individuals who are randomly assigned to an exercise or a control group.

Improved self image/esteem/confidence

Self esteem is influenced by many internal and external influences including parents, friends, media and society as a whole. Voigt, R.J. Who Me? Self-esteem for people with disabilities **Retrieved May 30, 2004 from http://www.uwec.edu/counsel/pubs/disabilities/htm** Within our society there is a huge emphasis placed on appearance and ability and therefore the messages disabled people often receive about themselves can be quite negative. For some individuals this can lead to internalised self criticism and negativity towards their self image (Heath, 1997) making it difficult for some disabled individuals to see past their own impairment and find their own identity. Voigt, R.J. Who Me? Self-esteem for people with disabilities **(Retrieved May 30, 2004 from http://www.uwec.edu/counsel/pubs/disabilities/htm**

Invisibility of disabled people within certain arenas e.g. the media, can be compounded further by services such as leisure facilities lacking pool hoists at swimming pools. For

those with limited mobility this lack of equipment to aid access may suggest to them that that they are not expected to participate in this activity, leading to further exclusion.

However, regular physical activity participation has the potential to improve individuals' self esteem and confidence. It provides individuals with the opportunity to challenge some of the concepts/beliefs that they may have developed about themselves, through skill development and task mastery, which will give individuals more control over their lives, and may give them a huge psychological boost (Heath, 1997).

One study, which demonstrated the potential of physical activity to improve mental wellbeing among disabled people, is Levin's study of societal and individual barriers to participation(Levins, Redenbach, & Dyck, 2004). Participants with spinal cord injuries indicated that their perception of themselves was shattered by their injury but that one factor, which seemed to play a role in helping individuals to reestablish their life, form a new sense of identity and generally increase their self confidence, was participation in physical activity. One participant was quoted as saying that wheelchair sport was " a tremendous vehicle to build self esteem, self confidence and to feel capable as a person'.

Barriers

Encouraging adults to change from an established pattern of sedentary behaviour to one that is more active is difficult. Despite all the evidence outlining the benefits of physical activity the vast majority of individuals are still not meeting the minimum recommended level of physical activity required for health gain. Therefore it is important that those working to increase activity levels have an understanding of the factors that enable some individuals to become active and sustain an active lifestyle and those that prohibit others from doing so (Woods., Mutrie., & Scott., 2002). Identifying and removing obstacles is an effective way of enabling people to adopt many behaviours including participation in physical activity(Becker & Stuifbergen, 2004).

Successfully determining the factors that enable people to become active is difficult, however, given the diversity amongst different groups of individuals and among individuals themselves. Indeed barriers commonly cited differ depending on the age and stage of life(Scottish Executive, 2003b). For young people, the attraction of other activities and lack of time are key determinants, whereas for older adults poor health and bad

weather seem to influence participation(Scottish Executive, 2003b). Given that disabled people are generally amongst the most inactive members of the population, there is a clear need to study the barriers they face in order to gain a better understanding of what prevents them from participating (Heath & Fentem, 1997; Jones, 2003; Messent, Cooke, & Long, 1999a; Rimmer, Riley, Wang, Rauworth, & Jurkowski, 2004; Rimmer, Rubin, & Braddock, 2000; Turk, Geremski, Rosenbaum, & Weber, 1997).

One theory has traditionally been that the barrier to participation for disabled people is the impairment itself (Levins et al., 2004). Individuals often cite their impairment as an impediment to health promoting behaviours (Becker & Stuifbergen, 2004). The assumption that people can not participate because of their impairment sits within the medical model of disability, which has recently been challenged. There is almost an assumption that physical activity participation is in some way elective and that the barriers people experience are largely attributed to the individuals themselves and their own perceptions. However, for disabled people there appear to be far more external barriers with several studies highlighting the influential role society plays in determining the likelihood of participation (Levins et al., 2004; Messent et al., 1999a; Rimmer et al., 2004; Rimmer et al., 2000; ScotPorterResearchandMarketingLtd, 2001).

To date there has not been a systematic review of the barriers associated with participation in physical activity among disabled people ((Rimmer et al., 2004), but there is some evidence to suggest certain barriers. These barriers are dealt with in the next section.

External barriers

Physical access barriers

One of the most obvious external barriers for disabled people is physical access. Lack of elevators, inaccessible access routes, narrow doorways, lack of ramps and reception desks that are too high have all been cited by a variety of people as presenting barriers ((Rimmer et al., 2004). If the natural environment is inherently inaccessible or access is difficult then this is a considerable deterrent to participation. The implementation of the final stage of the Disability Discrimination Act means that service providers are required by law to ensure that access issues are addressed. Whilst new buildings may look to access as a matter of course, it may take time for already established buildings to become fully accessible.

Lack of suitable equipment/opportunities

Increasing physical activity participation requires more than just access to the building itself (Levins et al., 2004). Once inside individuals need to be able to access suitable equipment and opportunities to participate. Equipment was highlighted within Rimmer's (2004) study of barriers and facilitators. The main issues raised with regards to equipment were as follows:

- Inadequate space between equipment for wheelchair access
- Poor equipment maintenance
- Lack of adaptive or accessible equipment.

If the equipment is inaccessible either in terms of its placing or its design then it is unlikely that participation will be increased. In order to make participation meaningful and remove barriers to participation there needs to be suitable adaptive equipment present within facilities accessible to a range of individuals so that people can actually take part. This should be done in full consultation with disabled people to ensure equipment and the positioning of this equipment meets their needs.

Additionally several studies have cited lack of opportunities as a barrier. If there are no opportunities available to people then it is unlikely that they will be able to increase their activity levels. Whilst over the past few years there has been a growing emphasis on promoting 'active living' as a means of increasing physical activity participation, this concept as a means of increasing activity may not be readily accessible to disabled people(Messent, Cooke, & Long, 1999b).

For example, for people with learning difficulties, the presence of secondary conditions, the impact of their impairment and personal freedom afforded by living circumstances, are all likely to have an effect on individuals' levels of activity and health outcomes (Messent et al., 1999b). For other impairments, the dependency on support from family, friends, carers and or support workers may inhibit personal freedom of choice of activity.. Equally some do not have the physical capacity to take stairs instead of a lift; others may not be able to walk at all. This means that in order to participate, some individuals will have a greater reliance on provision through existing services.

Lack of knowledge

Lack of knowledge about the benefits of physical activity, where to participate, what is available, how much to do and what to do to gain health benefits, have all been cited as reasons for low levels of physical activity participation amongst disabled people (Powers, 2001; Rimmer et al., 2004; Rimmer et al., 2000; Scot Porter Research and Marketing Ltd, 2001). Perceptions of benefits was a significant predictor of exercise participation among a sample of outpatients with rheumatoid arthritis (Heller, Ying Gs, Rimmer, & Marks, 2002). This finding relates to the health belief model, which states that one of the key factors needed for behaviour change to take place is a belief that it would be of some benefit(Naidoo & Wills, 2000). This would therefore suggest that if disabled people are unaware of the benefits or do not believe that they can benefit then they are unlikely to participate.

It is not just a lack of personal knowledge that results in barriers to health promoting behaviours including physical activity participation; lack of knowledge among staff has also been highlighted (Rimmer et al., 2004). With regards to physical activity, this lack of knowledge relates to a lack of information about disabilities themselves, how to adapt programmes and equipment to make them more accessible and, among 'front line' staff, a lack of knowledge about what is available.

Cost

Disabled people are generally in lower income jobs than many non-disabled individuals or are unemployed. The 1999 Scottish Household Survey found that 40% of all disabled people live in poverty, with 50% of all disabled people having an income in the bottom 25% for the general population (Scottish Executive 1999, NHS GG 2003). Based on several criteria, households with disabled people were more likely to be worse off financially than those with no disabled residents.

Given this information, it could be expected that cost may be a barrier to participation for many individuals and indeed cost has been cited in several studies (Messent et al., 1999a; Rimmer et al., 2000; ScotPorterResearchandMarketingLtd, 2001).

Arthur and Finch (cited in (ScotPorterResearchandMarketingLtd, 2001) surmise that financial cost in itself is not a deterrent to participation in physical activity but does affect the choice of activities on offer to individuals and how often they can participate. In a study carried out by Messent (Messent et al., 1999a) it was found that the individuals in the residential unit being studied had little disposable income. Care staff estimated that the majority of individuals would have approximately £10 a week to spend on leisure needs including transport costs, which would preclude regular participation especially if transport was required.

Lack of Transport

Lack of transport has been a commonly cited barrier in many of the studies looking at barriers to physical activity for disabled people (Messent et al., 1999a; Powers, 2001; Rimmer et al., 2004; Rimmer et al., 2000). Access to public transport can be restricted and very time consuming, however other transport methods such as cars are expensive and often transportation by this mode relies on the availability of others.

Attitudes of others

Attitudes of others has been cited as a barrier for many disabled people ((Levins et al., 2004; Rimmer et al., 2004). Participants in Rimmer's 2004 study of barriers and facilitators to physical activity commonly stated that reluctance to participate was because of the perception that facility staff would be unfriendly. These comments were often made by disabled people in conjunction with other negative attitudes and behaviours about non-disabled people including staff and users of leisure facilities(Rimmer et al., 2004). Participants in Levin's study equally noted several ways the actions and attitudes of others affected their participation in physical activity. Some individuals stated that the general public either 'discounted or underestimated their abilities' or because of their impairment associated negative attributes with them. Other individuals indicated that it was negative views from others that led to increased self consciousness which in turn impacted on their participation levels.

However it is not just the attitudes of non-disabled people working and using leisure centres that seem to be influential, attitudes of significant others similarly appear to have an impact on participation among disabled people(Heller et al., 2002; Levins et al., 2004; Scot Porter Research and Marketing Ltd, 2001). Heller et al (2002) looked at the

determinants of physical activity in adults with cerebral palsy and found that the attitude of the individual's caregiver was likely to determine whether or not the person with cerebral palsy was active or not. They found that a large percentage of caregivers had a negative attitude towards the expected outcomes of physical activity for the individuals that they supported. One of the key recommendations arising from this study was that, to increase participation, educational work should be carried out with caregivers about the benefits of physical activity for disabled people.

Worryingly, in Levin's study, one participant also reported that their physical therapist was also someone who presented barriers rather than facilitating their participation in physical activity and indeed actually discouraged participation proving unhelpful in finding and adapting activities for this person (Levins et al., 2004).

Place of residence

Several studies have found that with regards to people with learning difficulties, individuals' living arrangements influenced to some degree, the likelihood of their participation in heath promoting practices (Messent et al., 1999a; Rimmer, Braddock, & Marks, 1995; Sutherland et al., 2002). With regards to behaviours such as smoking and nutrition it appears that when individuals have greater personal freedom, or live in less restrictive environments, they are more likely to engage in negative health behaviours than when in controlled environments where perhaps individuals are not necessarily afforded the opportunity to choose 'unhealthy options'(Sutherland et al., 2002).

However the opposite seems to be the case with regard to physical activity participation. Messent et al found that individuals with mild-moderate learning disabilities living in group homes, had few choices and opportunities to participate in physical activity which appeared to be a result of unclear policy guidelines, staffing ratios, financial constraints and lack of available accessible facilities(Messent et al., 1999a).

Additional barriers

Often the resources produced which outline the benefits of activity, the range and location of facilities, do not take into account the diverse needs of individuals. Sometimes the text size, font and/or colour may make it difficult for someone with a visual impairment to read. For many of these individuals a leaflet may be a completely inappropriate means of

information dissemination. When producing leaflets or information there is often an assumed level of cognition, which individuals with a learning difficulty may not have. Information for those with learning difficulties needs to be more pictorial and less textual. Unless tailored appropriately, individuals with learning difficulties may find the content inaccessible. Telephones, tannoys and sirens may be suitable for some people, but not for others, therefore it is important to have several means of communication available. Not knowing what information to ask for in addition to not knowing who and where to ask for it can also create barriers to participation for individuals.

Internal barriers

Self-Efficacy

In 2002 Stutts looked at the determinants of physical activity among non-disabled adults (Stutts, 2002). This study found that the only variable to predict physical activity participation amongst those who were inactive and those who were active was self-efficacy i.e. belief in one's ability to carry out a task (Bandura., 2004). If this plays a role in determining participation in non-disabled people, where there are perhaps fewer difficulties, then it is likely that self-efficacy has a role to play in determining whether disabled people will participate. Indeed in a report commissioned by sportscotland they identified that amongst those who took part in the study it was the individuals' self confidence and attitude towards their impairment rather than the impairment itself that defined their overall attitude and behaviour(Scot Porter Research and Marketing Ltd, 2001). Additionally several studies suggest that for individuals with physical impairments self-efficacy is positively associated with health outcomes (Hughes, Nosek, Howland, Groff, & Mullen, 2003)

Although self efficacy is noted as an internal barrier it is worth considering to what extent lack of self-confidence and self-efficacy has been shaped by society's attitude towards disability. Popular media can influence a person's self image by creating an image of what is ideal in terms of body, ability and appearances. The further away people are from the 'ideal', the less well they may perceive themselves. The images that the media portray in relation to physical activity, combined with the lack of opportunities for disabled people to participate, may create a perception that physical activity is not for disabled people. This may in turn have a negative effect on an individual's self-efficacy in relation to physical

activity, making it less likely that they will participate. Positive images of disabled people taking part in physical activity may go some way to tackling this barrier.

Additional Barriers

Individuals may experience barriers, which could be a consequence of their impairment, however equally could be a consequence of sedentary living. For example, for people with multiple sclerosis, pain and fatigue are commonly cited as barriers to physical activity. Whilst these symptoms may be a result of the condition itself and may prevent participation, they could be symptoms resulting from physical inactivity, which could be improved were physical activity to be undertaken. Individual barriers need to be taken into account when encouraging people to participate in physical activity and when delivering sessions to them.

Stages of change and barriers to physical activity

In 2002 sportscotland commissioned a study to look at ways of identifying strategies for increased participation in sport among disabled people. To meet the research objectives they worked with the principles of 'social marketing' which uses the rules of commercial marketing and applies them to social issues to affect behaviour change. The principle of the model used in Scott Porter's research is that people do not simply change from one behaviour to another; there is a process of change that includes a variety of different stages of change through which people move. The stages in the model are as follows:

Precontemplation: The consumer is not thinking about the behaviour as being appropriate for them at this point in their lives.

Contemplation: Consumers are actually thinking about and evaluating recommended behaviours.

Preparation: Consumers have decided to act and are trying to put into place whatever is needed to carry out the behaviour.

Action: Consumers are doing the behaviour for the first time or first few times

Confirmation/Maintenance: Consumers are committed to the behaviour and have no desire or intention to return to earlier behaviour.

The authors of this report felt that there was an opportunity to map reported barriers experienced by participants to each the different stages of behaviour change. It was felt that this would be useful in order to gain an understanding of the issues that prevent people from participating and in terms of being able to develop appropriate strategies to move individuals to the next stage of behaviour. The barriers individuals in Scott Porter's study experienced were as follows:

Precontemplation

Society's attitude to disabled people

The accepted definition of sport

Lack of awareness of other disabled people taking part

Lack of awareness of the facilities and activities on offer

Contemplation

Fear of discrimination

Lack of confidence

Attitudes of significant others

Lack of awareness of appropriate sporting environment

Preperation

Difficulty in accessing information

Attitudes and behaviours of others

Lack of appropriate facilities and activities

Cost

Action

Attitudes or behaviours of others

Lack of confidence

Inappropriate facilities and activities

Communication

Maintenance

Withdrawal of support and discontinuation of activity

Attitude and behaviour of others

Cost

Lack of infrastructure to support development of sport

There are some limitations to the findings produced in this report. Firstly the number of individuals who took part in this study was quite small, and the age range quite diverse (5-60+). Whilst it is not to say that 5 year olds are not able to contribute to this process their experience may be somewhat limited. As this was a Scottish report the participants were all Scottish which also may limit the findings in terms of a wider audience. Additionally the findings were reported collectively meaning the information was not broken down by different impairments. Had this happened with larger numbers of individuals, the findings may have been different. Although there are some limitations, this study does provide a useful starting point for tailoring health promotion interventions, which attempt to reduce barriers and increase participation among disabled people.

Health Promotion interventions aimed at disabled individuals.

Although there is more evidence appearing which highlights the benefits that disabled people can derive from participation of physical activity (Jacobs et al., 2001; Shephard, 1991), the literature is still quite sparse evidencing health promotion programmes /intervention that have been successfully designed to increase physical activity participation among disabled people.

In terms of Health Promotion, the message currently being promoted across Scotland (and indeed the UK), in an attempt to enable people to become more active is - Active Living. This message, as outlined previously, suggests that many activities can be easily incorporated into everyday life as a means of meeting the recommended minimum level of physical activity required for health gain. The ideology is that people who are currently sedentary can become physically active and thus improve their health without too much effort, making it more accessible and attractive.

It is not known whether the active living message elicits the same benefits among disabled people as non-disabled people. Additionally, it has previously been mentioned that this strategy is perhaps not as easily accommodated by some disabled people and thus it is not perhaps the most appropriate or accessible message to promote to disabled people as a whole. However, it would be useful to know if the potential is there to use this message as a strategy for increased and maintained participation among some disabled people.

In 2004 Warms et al (Warms, Belza, Whitney, Mitchell, & Stiens, 2004)decided to evaluate the acceptability and feasibility of this active living message among 16 non - exercising individuals with spinal cord injuries. What they found was that most people understood the concept of active living and indicated that it made sense to them. Most said it was easy to do, it did not interfere with other activities and worked for them. It was not, however, always the prefered way to increase activity. This may be because it does not necessarily bring the social benefits of reducing the social isolation that attending a leisure centre, club or activity class might. In terms of its effect on the measureable outcomes taken pre and post intervention, 81% of individuals progressed in terms of their stage of behaviour change, 60% increased their levels of physical activity and significant changes were also noted in the motivational barriers experienced by participants, self efficacy levels, self related health and muscle strength.

Whilst this study would indicate that the active living message may be appropriate to promote to those with spinal cord injuries, and thus perhaps the wider disabled community, as a means of increasing physical activity levels, there are a number of issues which limit the generalisability of these findings.

Firstly, the sample size was small (n=16) and limited to those who had sufficient arm function to self propel a manual wheelchair. Therefore the intervention may not be applicable to those without this level of function. Secondly, the sample consisted mainly of males (n=13). Evidence shows that females are generally less active than men and it is well documented that more work is required to target this group. It would have been interesting to establish whether or not these changes would have been replicated or as pronounced had the sample consisted predominantely of females.

Thirdly, activity levels were only measured over four days which perhaps do not conceptualise the difficulties experienced trying to maintain participation in the face of intermittent health problems. Similarly, the follow up was carried out after only 6 weeks which is a relatively short time span. It may have been useful to do a longer term follow – up day 3- 6 months later to see if the behaviour was maintained.

Fourthly, 87% of individuals had completed some vocational training or college education after high school and 62.5% were employed, suggesting the sample was quite motivated and also more educationaly advantaged which is a determinant of how likely individuals are to engage with health promoting activities and messages(Leganger, 2003).

Lastly the sample had been living with their impairment for on average 14.4±14.6 years which may mean that they might be more open to health promotion strategies that someone who had been living with their impairment for a shorter period of time. Several individuals in Levin's study (2004) talked about a process of coming to terms with a 'new sense of self'. Levin's study indeed indicated that the time during which individuals were being forced to redefine their previous image of themseves was the time when physical activity participation was likely to be put on hold. However, physical activity always seemed to play a role in the redefining of onself following a spinal cord injury.

As already said, the active living message may not suit everyone and therefore it is important that more structured opportunities/programmes are also available. In 2002 Tate et al carried out a two year randomised control trial designed to develop and evaluate the effectiveness of a comprehensive and integrated wellness programme for men and women aged 22-80 with spinal cord injuries. The programme consisted of a series of hour long workshops and followup counselling which was there to offer help identifying any problems, and generating, evaluating and implementing strategies to overcome these barriers. The hypothesis was that those attending the programme would experience fewer secondary conditions, demonstrate improved physiological and psychological health, perceive improved quality of life and change their health knowledge, beliefs and behaviours (Tate et al., 2002).

Within the programme physical activity participation and physical fitness were both measurable outcomes. Using the Health Promoting Lifestyle Profile (Walker, Sechrist, &

(1987). 1987), participation in physical activity was significantly improved for those individuals who had attended the workshop, whilst those in the control group showed no improvements. However, when the Physical Activity and Disability Survey (which is a more extensive and detailed measure of an individual's level of activity) was applied, there was no significant change for either the workshop or control group over the course of the project. In relation to physical fitness there were some positive trends but the authors concluded that the small sample size and short time frame of the project probably precluded them from attaining statistical significance. The overall conclusion of this study was that this programme had resulted in positive changes in the health behaviours of the participants with spinal cord injuries.

Whilst this is promising, and offers guidance to those wishing to develop health programmes for disabled people, it also presents quite a challenge. Whilst extensive evaluation is important to ensure effectiveness and appropriateness, the methods for evaluating the effectiveness of this programme required a substantial amount of pre and post intervention measurements, some physiological which may not be feasible for those involved at a local 'planning' level. Additionally, whilst the benefit of undertaking randomised control trials is that they can demonstrate or indicate a cause and effect, in a 'real life' environment, denying a subset of individuals access to a service is unlikely to be feasible. Therefore, for those working to promote health it is often hard to establish what constitutes a valuable physical activity health promotion intervention for disabled people and how best to monitor this.

Aware of the difficulties in evaluating programmes, and the lack of evidence highlighting the efficacy of exercise classes in supporting the physical and psychological health of those with mobility impairments other than in controlled settings, Maher and colleagues (1999) evaluated a community based conditioning class for adults with mobility impairments. In order to do this they used both quantitative and qualitative methods.

Quantitative and qualitative evaluation differs in that the former is invariably viewed as being more scientific and thus more reliable because it measures changes in outcomes from pre and post intervention for example changes in quality of life or health status. Whilst this type of evaluation is valuable, it is perhaps disempowering to the individuals being researched and allows these individuals little scope to express their own opinions and experiences (Maher, Kinne, & Patrick, 1999). Qualitative research however, whilst it does

not necessarily capture hard outcomes, does permit individual reflection and thus contributes an additional level of understanding that perhaps quantitative measures alone may miss.

This indeed was what was found in Maher's evaluation, in that had they used purely quantitative methods they may have come to a different conclusion as to the value of the programme. Maher and colleagues indicated that using a mixture of qualitative and quantitative methods would give the researcher/professional greater insight.

Whilst both Tate (2002) and Warm's (2004) studies have their limitations, they both share a successful commonality. Both studies use goal setting (which is a key component of exercise consultations (Loughlan & Mutrie, 1995)), one to one support and follow up/ongoing monitoring to encourage uptake, participation and adherence. Physical activity counselling has been shown to be successful in attracting sedentary people to increase their levels of activity participation including those with specific medical conditions(Kirk, Mutrie, MacIntyre, & Fisher, 2003) and socially excluded individuals (Lowther., Mutrie., & Scott., 2002). It could therefore be postulated that this type of intervention could be beneficial to disabled individuals as a means of increasing participation. Warms (2004) in fact infers that education and counselling provided by a health care provider may elicit behaviour change among those with spinal cord injuries. Rimmer also reported that exercise consultations or contact with a fitness professional may help to achieve long-term adherence to physical activity among African American women (Rimmer et al., 2002).

Whilst education and counselling by a health care professional may be one potential means of eliciting behaviour change where there are existing structures in place, another may be to use peer educators. Hughes et al (2003) found that a health promotion programme delivered by peer educators was successful in deriving positive health outcomes for women with physical disabilities (Hughes et al., 2003). As in the studies carried out by Warms and Tate, Hughes' study included activities such as goal setting and problem solving, but these were carried out as group activities alongside mutual support and role modelling. It should be noted that although the results were very positive, they only applied to a small number of women (n=15). Additionally the vast majority of those who participated, had postsecondary education which may mean that the findings are not applicable to those

without this level of education. Additionally Hughes had developed this approach to run women-only groups and therefore the findings may not be replicated were the groups mixed gender or comprised of men only. Given that this approach could be quite empowering, further research is needed to see whether peer education could potentially be a successful strategy for encouraging increased physical activity participation amongst disabled people.

Physical activity interventions for disabled people in Glasgow

At a local level in Glasgow there have been relatively few specific interventions aimed at encouraging participation among disabled people specifically those with a physical impairment. In 2003 the NHS Quality Improvement Scotland visited services for children and adults with physical disabilities in the Greater Glasgow area. They noted that whilst there were some good examples of Health Promotion initiatives, in general there was little attention paid to the diverse needs of people with physical disabilities. Healthy living and maintenance were identified as areas that needed attention and it was noted that despite the increase in the fitness and leisure industry, very few offered suitable access to classes or programmes for people with a physical disability.

Outline of this research

Clearly the benefits of physical activity participation for disabled people are not as well documented, as within the non-disabled community, however it would appear that there are benefits to be derived amongst the disabled community as a whole including those with specific impairments. Having reviewed the literature 3 key questions emanated and influenced the construction of this research:

- What was the current level of physical activity amongst disabled people living in Glasgow?
- What barriers did disabled individuals living in Glasgow currently face in relation to physical activity?
- What might enable disabled people in Glasgow to become more active?

As the 3 studies to address these questions were developed, the focus became specifically about those with physical impairments. The findings are outlined in the following chapters

Chapter 3 - Study 1

An evaluation of a pilot physical activity programme established for people with physical impairments.

Chapter 4 - Study 2

Critique of the current provision and equipment within Glasgow City Council facilities for people with a physical impairment.

Chapter 5 - Study 3

Survey of individuals with physical impairments and parent/carers of people with physical impairments examining behaviours, beliefs, barriers and facilitators in relation physical activity.

Chapter 3

Evaluation of 'Adopt a Lifestyle' pilot project

Introduction

In 2001 Glasgow's Community Physical Disability team expressed their concern about the lack of physical activity opportunities in Glasgow for physically disabled people and highlighted the need to develop an appropriate physical activity programme.

A multiagency group was established and consisted of representatives from the Physical Activity Team within the Health Promotion Department of Greater Glasgow NHS Board; Glasgow City Council Culture and Leisure Services Disability Team; Glasgow City Council for the Voluntary Sector Sports Unit; Glasgow's Community Physical Disability Team and Greater Glasgow NHS Primary Care Trust. The purpose of this group was to develop a pilot project, which would increase the opportunities for physically disabled people to participate in physical activity and increase their access to information on a variety of health topics. This was later named the 'Adopt a Lifestyle' pilot.

The multiagency team had 5 predefined key objectives. These were:

- To give participants the opportunity to take part in appropriate physical activity programmes in a mainstream environment
- To encourage participants to have a positive attitude towards physical activity
- To contribute to participants having an improved quality of life
- To provide relevant coach education and disability awareness training for staff
- To highlight the barriers and shortcomings of the current service

In order to establish whether or not the pilot was successful in meeting its aims and objective, the multiagency group decided that it was important to approach an external researcher to evaluate the pilot. The group contacted the University of Glasgow to ask if there were any students who would complete this piece of work as part of their studies, and I agreed to undertake this evaluation.

Reasons to Evaluate

Before making any decision about implementing a new initiative, evaluation should take place. Financial constraints often shape and dictate how services are developed and delivered, and therefore those involved in planning need to ensure that resources are targeted appropriately. The main purpose of evaluation is to examine the extent to which the aims and objectives of any project/work/intervention are attained, whether these objectives have actually led to a desired effect and the extent to which these objectives have been achieved economically(Naidoo & Wills, 2000). Evaluation can ensure that time can be saved, by preventing less effective methods and strategies being repeated and it can help to make future strategies more successful through informed choice. With regards to the 'Adopt a Lifestyle' pilot, evaluating the class would additionally give the multiagency group a better understanding of the class outcomes and their importance for the participants. By evaluating the pilot, information could be gathered to ensure that any future roll-out would meet the needs of the targeted audience and perhaps increase physical activity participation among others with physical impairments.

How to evaluate?

Evaluation can be a complicated process and evaluators use a variety of both qualitative and quantitative methods to collect the information they require. Maher and colleagues (Maher et al., 1999) previously evaluated a community based conditioning class for adults with mobility impairments and found that using a quantitative questionnaire in conjunction with qualitative interviews allowed them to gain a more holistic understanding of the programme that they were evaluating.

In addition to using a variety of methods to effectively evaluate a project, it is important that varying assessments are made at different stages of the project's implementation. Therefore to evaluate the 'adopt a lifestyle pilot' it was decided that a mixture of qualitative and quantitative techniques would be used and that the processes, impact and outcomes (Naidoo & Wills, 1994)of the pilot would be evaluated as follows:

- Process evaluation - examining the ways in which the intervention or programme was established.

- Impact evaluation - examining the immediate effect of the intervention, in terms of participation levels and perceived benefits of the intervention.
- Outcome evaluation - examining the effects of the intervention from a longer-term perspective

(Naidoo & Wills, 1994).

The three aspects of the evaluations will now be explained in detail:

Process Evaluation

To evaluate the process by which the pilot had come about it was decided the following should be examined in detail.

Structure and input

Staff time involved in the implementation of the project including administration time and in the delivery of the exercise sessions.

ii) Training of staff who were involved in the project in terms of time and cost

iii) Resources used in implementing the project (cost of facility hire and publicity)

Objectives

How successfully the various agencies met their objective of providing increased opportunities for those with physical impairments to participate in physical activity.

ii) Effectiveness of staff training

iii) Barriers and shortcomings of current service

Impact evaluation

The impact of the pilot was evaluated by examining:

- Percentage recruitment in relation to flyers administered
- Participants views on the perceived benefits of the pilot
- Reasons for non compliance
- Future exercise intentions

Outcome Evalution

When it was decided that the pilot should be evaluated there was no intention to carryout a longer-term follow-up of the participants. Therefore, the outcome evaluation examined any changes that had occurred from before the pilot started till after its completion. The areas examined in order to do this were:

- Changes in exercise knowledge (Before and after the 8 week programme)
- Changes in Physical self perception (Before and after the 8 week programme)

However, it became apparent that a longer term follow-up of the participants who had participated in the pilot would be possible. Those individuals who had taken part in the original evaluation were contacted to investigate whether 3 years later they were still participating in physical activity and whether they felt the pilot had been instrumental in their continued participation. It was felt that this information would add to the overall findings of the evaluation and give those involved in disability, health and leisure some additional information that may assist future service planning.[1]

Methodology

Participants

A combined information and application form was produced and distributed to fourteen organisations within Glasgow. These organisations provide services and support for people with a physical disability/impairment (Appendix 1). Around 300 applications were administered, each outlining the purpose of the project, the start date, time, the venue and the cost of the sessions. 'Adopt a Lifestyle' was open to anyone with a physical disability/impairment (Appendix 2). Those with learning difficulties and complex disabilities (combination of physical and learning) were not permitted to attend, as they were not included in the remit of the pilot as outlined by the multiagency group. Over the eight weeks a total of 26 participants attended.

For the follow-up study, the participants were those who had regularly taken part in the pilot project and who had been involved in the original evaluation process.

[1] A three year follow up was possible due to a postponement in studies because of new professional comitments.

Procedures

Prior to any data collection or the administration of any forms for both the original evaluation and the 3-year follow up, the research proposals were submitted for ethical approval to the University of Glasgow's Faculty of Biomedical and Life Sciences Ethical Committee. Approval was granted for both these studies (Appendix 3).

Those interested in participating in the pilot were asked to complete and return an application form and to attend Tollcross Leisure Centre on Thursday the 28th of May 2001 at 1pm. During the first week, participants were introduced to the staff and given a complimentary soft drink. They were asked prior to any activity to fill in a PAR-Q (Pre Exercise Assessment Questionnaire) (Appendix 4) in order to give the coaches some background into their medical history. During the second hour of this first week, the participants were informed that an evaluation study was going to be taking place and that they could participate in the evaluation if they wished. All attendees were issued with an information sheet and consent form (Appendices 5,6) that was to be signed prior to any data collection. Individuals were made aware both verbally and in writing that they were free to withdraw from the evaluation at any point and that this would not affect their ability to participate in the 'Adopt a lifestyle' pilot itself.

The signed consent forms had a section for people's addresses. Some people chose to complete this part of the form; others did not. These addresses were used to write to those participants who had taken part in the 'adopt a lifestyle' evaluation, inviting them to participate in the follow up study.

Process Evaluation

In order to gain information about the structure and input required for the pilot's implementation, particularly in relation to the cost of the project and staff training, it was decided that structured interviews should be carried out with individuals from the multiagency group. The interview questions are included as an appendix (Appendix 7), as are the transcripts (Appendix 8).

How successfully the multiagency group had met their aims and objectives, was measured through self-administered questionnaires (Appendix 9) and structured one to one

interviews with the participants. The questionnaire was designed to gauge participants' views about the pilot and was adapted from a study previously carried out to evaluate a cardiac rehabilitation programme (Sutherland). The questionnaire addressed issues such as previous exercise history, accessibility, likes, dislikes and perceived benefits of the programme. This particular questionnaire was administered on the last week of the pilot. Members of staff running the pilot and paid carers/personal assistants were on hand to support participants who had difficulty completing the questionnaire. Regular attendees, who missed the last session, were telephoned and asked if they would mind answering the questions contained within the questionnaire over the phone. Their answers were recorded and added to the existing data.

The one to one interviews took place during weeks seven and eight. All participants were made aware that the interviews were being recorded and that the information would be used for the purpose of the evaluation. The interview questions (Appendix 10) related to opinions they may have had. All interviews were recorded and later transcribed for themes (Appendix 11).

Other outcomes as outlined by the multiagency group were to:

- Ensure the provision of effective staff training
- Identify any barriers and shortcomings of the current service

This information was collected through one to one interviews with participants, member of the multiagency group and with the coaches involved with the delivery of the pilot (Appendix 12,13).

Impact Evaluation

The impact the advertising had in relation to encouraging participation was measured by identifying the number of people who registered as a percentage of the number of flyers administered.

To establish the immediate impact the pilot had had on individual's lives, one to one interviews were carried out to try and identify any benefits the individuals participating in

the pilot perceived it to have had. Questions were also asked within the self-administered questionnaire as to any perceived changes in fitness, anxiety levels and self confidence.

In addition to looking at the positive impact the pilot may have had, it was felt that it was important to follow up those participants who had stopped attending. This would help to identify any barriers or shortcomings of the service that may not have been identified by those who regularly attended. A questionnaire was devised and administered to individuals over the telephone. Participants were reminded that they did not have to take part in the study, that participation was entirely voluntary and that they did not have to answer any of the questions if they did not wish to. Answering the questions was taken as consent for the information to be used. Answers were recorded on paper. Those who did not want to fill in the questionnaire were given the opportunity to express their views freely if they so wished, and again their opinions were noted (Appendix 14). All the participants contacted had previously signed a written consent form to take part in the evaluation.

Outcome Evaluation

Initially the outcome evaluation aimed to address the remaining objectives of the pilot, namely whether it had encouraged the participants to have a positive attitude towards physical activity and improved their quality of life. In order to assess this, two questionnaires were administered to the participants prior to the start of the pilot and again at the end of the 8 weeks.

Exercise Knowledge Questionnaire

This consisted of twelve true or false questions that tested the participant's basic knowledge about various aspects of exercise participation (Appendix 15).

Physical Self Perception Profile

The Physical Self-Perception Profile (PSPP) was devised by Fox (1989) to assess individuals' self-perceptions specifically focusing on the physical aspect. Given that self-esteem has been shown to be very influential in terms of determining behaviours, Foe et al decided that it was important to have some tool, which could allow self esteem to be examined. The advantage of the physical self perception profile is that it focuses on multiple aspects of self perception rather than just one facet, which produces a greater source of information from which comparisons can be made(Corbin, 1989) .

As physical activity has been shown to have positive effects on individuals physical self perception, it was decided that the PSPP would be a useful tool to assess the benefits the adopt a lifestyle pilot may have had for individuals. In addition, it would also provide useful information as to whether there were differences between those who adhere to the programme in terms of self perception and those who did not. The profile comprises of five 6-item subscales. Four of these subscales are designed to assess perceptions within specific subdomains of the physical self. A fifth subscale is included in the profile to measure general overall self worth. After the initial administration of the profile it became apparent that in full, it was going to prove too much for the majority of the participants. Therefore, it was decided that the profile should be shortened to look only at the subscale relating to overall physical self worth. (Appendix 16)

In addition whilst examining outcomes, changes in perceptions of physical fitness, anxiety and confidence were also explored, as were adherence rates and views on long-term participation. Apart from adherence rates these indices were all assessed through the post pilot 8-week questionnaire (Appendix 9). Adherence was measured using the weekly register.

To assess the longer-term outcomes of the pilot, a questionnaire was devised and sent to those individuals who had taken part in the original evaluation (Appendix 17).

The questionnaire was designed to establish the following:

- Were people still participating in physical activity?
- If so what form did this take, where was it being carried out and how often?
- If not, when had they stopped and why?
- What they felt was needed to enable those with a physical impairment to become more active
- Whether they felt the 'Adopt a Lifestyle' pilot had enabled them to become more active
- Accompanying the questionnaire was an information sheet that:
- Outlined the purpose of the study
- Reminded them of their participation in the original evaluation

- Highlighted that participation was entirely voluntary and that they were under no obligation to take part.
- Who would have access to the information

A reminder would be sent one month on, but that if individuals were not interested in participating they were to ignore this and that this would be the last time they would be contacted.

To assist the return rate a stamped addressed envelope was also enclosed in which the questionnaire could be returned.

Data Storage and Analysis

All the data collected during the pilot and the follow-up were stored anonymously either on a computer file or in a locked filling cabinet. The only person with access to the information was the researcher. Tapes with recorded data were labelled and again locked away. All the results illustrated in graphic form were produced using Microsoft excel.

Pre and post tests were carried out to measure participants Physical Self Worth and Exercise Knowledge and to see whether the programme had an effect. The results produced from these tests were entered into Minitab and stored on a database. Paired t-tests were carried out to see if there had been any improvements in the scores relating to these two areas and whether or not these differences were significant.

During the initial evaluation Minitab was used because this was the only statistical package available. The information gathered during the follow up was stored entered into SPSS version 11 because this was available through my place of employment. Descriptive frequency statistics were carried out in SPSS 11 to analyse the findings.

Results

Care should be taken when drawing conclusions from the produced results, as the validity of the information is weakened by the size of the survey group and the fact that although some nonadherers were contacted, for the most part the results apply to those who attended regularly. Therefore in the main reflect a fairly positive response.

Ten people returned the post evaluation questionnaire that was administered and six agreed to be involved in the one to one interviews. For the follow-up study, only 8 quesitonnaires could be administered because 2 of the 10 individuals had not supplied their address on the consent forms. Of the 8 sent out, 4 were returned. This could be because during the 3 years, people had moved address or perhaps become unwell. The reminder did not elicit any further responses.

Process Evaluation - Structure and input

The data for this section was collected during the interviews carried out with members of the multiagency steering group and the pilot coaches.

Staff time

The total amount of time spent in the development of the programme was not available, as this had never been monitored during the pilot's development. However, there was some information available about the time invested by the coaches involved in the pilot.

During the actual duration of the pilot two of the three coaches dedicated 3 hours each week to the delivery of the activities with a third coach devoting approximately one hour each week. In preparation for the pilot, the coaches spent three full days attending the pre pilot training course and had several weeks of completing worksheets and lesson plans before the post course exam. The actual time spent preparing for the course examination was not monitored because the training occurred prior to the start of the evaluation and any official data collection. However a follow-up could have perhaps been carried out with all participants of this training and a gauge could have been made of the time invested. The usefulness of the information may however have been quite limited as the prior experience of those on the training course differed significantly with some having no prior experience of teaching to disabled people, to those who had been doing it for a number of years.

Staff training

Fourteen individuals were sent on the three-day advanced YMCA module entitled, 'Exercise for people with disabilities.' The group of individuals consisted of members of the GCVS sports unit, other physical activity professionals and the external researcher. Of the fourteen people sent on the course only six managed to successfully gain the

qualification. Three of these were already working in this area with the GCVS sports team; one was the external researcher and the remaining two passed after resubmitting paper work.

The coaches who took part in the pilot were from the GCVS sports team and were asked to express their views on the training. Again this was hard to monitor as both of the full time coaches had years of prior experience in the field of physical activity and disability and indeed one had not even undergone the training. The coach who had attended the YMCA course was asked whether they felt the course was sufficient for those with no prior experience. Whilst it was completely subjective, they indicated that they did not think so and that the high failure rate reflected this. They said:

'*No, not a three day course. You need to pick it up from working with disabled adults constantly, you were on the course yourself, certainly opened up their eyes and we could see that eh but the fact that quite a lot of people failed it proves that it wasn't sufficient.' (I1)*

Resources

The multiagency were asked to state how much it had cost to fund the pilot. The information given indicated that the total cost had been somewhere between £200 and £3K. Around £300 had been spent on the production of the information and application forms, whilst the hire of the centre was at a slightly subsidised rate and cost around £700. Glasgow City Council Cultural and Leisure Services paid for both these aspects of the pilot's implementation. The cost of the training was £2200 and was paid for by the Physical Activity Team within Greater Glasgow NHS Board Health Promotions Department.

One member of the multiagency group was asked how comparable this was to other pilot projects. This person indicated that although perhaps the training costs had been slightly higher due to a lack of locally appropriate training, the costs was pretty much on a par with other initiatives and may actually have been in the lower bracket. This person commented:

'I think it terms of other pilots we do its probably quite comparable, maybe a little bit more investment in terms of the initial training because there is probably a lack of appropriate training out there eh but there is a need for existing staff who work in mainstream settings to enhance their qualifications so that they feel more confident and that they actually do some of the qualifications that are industry recognised. So I think that's where there has been slightly increased costs but if I were to compare it to another pilot em its hard to say on that scale but I mean pilot project can range anywhere from £500 to £15000 or more so its I'd say in the lower bracket.' (MA2).

When asked about any difficulties they had experienced in devising the pilot the main issues identified by the multiagency group related to the time, resources and establishing the appropriate methodology for evaluating:

'...been a number of wee teething problems just with everything, I think obviously identifying research tools and everything, finding appropriate means of evaluating the pilot' (MA2).

'Em lack of resources and time.' (MA1)

Objectives

To evaluate how well the pilot had met the multiagencies first objective 'to develop a service that would increase the opportunities for people with physical disabilities to participate in physical activity in a mainstream environment and have access to information on various health topics' several different aspects of the programme had to be examined. These included:

- The design of the pilot in terms of the duration, timing, frequency, cost
- The variety of activities offered (appropriateness, popularity, range of choice)
- Accessibility
    - Of the centre in relation to each individual's place of residence
    - Within the centre itself

Duration and frequency

The 'adopt a lifestyle programme' was piloted for 8 weeks and participants were invited to attend once a week for three hours. The first hour was devoted to playing Boccia, a target game that is played in teams. During the second hour participants were given the option of attending health education workshops or they could enrol for a gym induction. The last hour was a structured circuit based exercise class, run by the coaches who had attended and passed the YMCA course.

When asked about the duration of the 'adopt a lifestyle' sessions 80%(n=8) of respondents felt that the duration of each session had been about right. The other 20%(n=2) felt that the sessions had been a bit long and that they would have preferred it if the one hour sessions had been cut to about 30 minutes each. When asked whether they felt one day a week was enough 60% (n=6) responded that they felt this was about right, whilst the other 40%(n=4) responded that they felt it was not sufficient. These results are illustrated in figure 3.1a and figure 3.1b

Figure 3.1a Illustration of participants perception of the duration of the exercise sessions

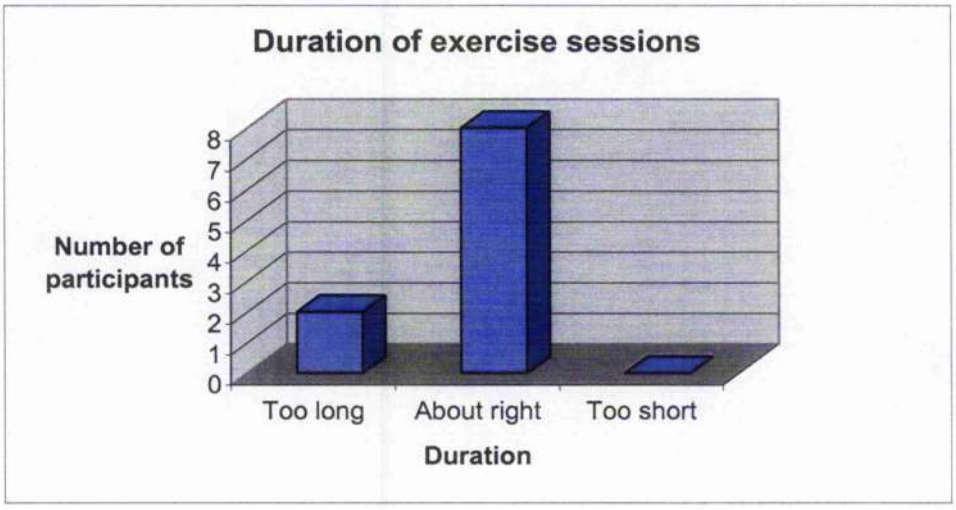
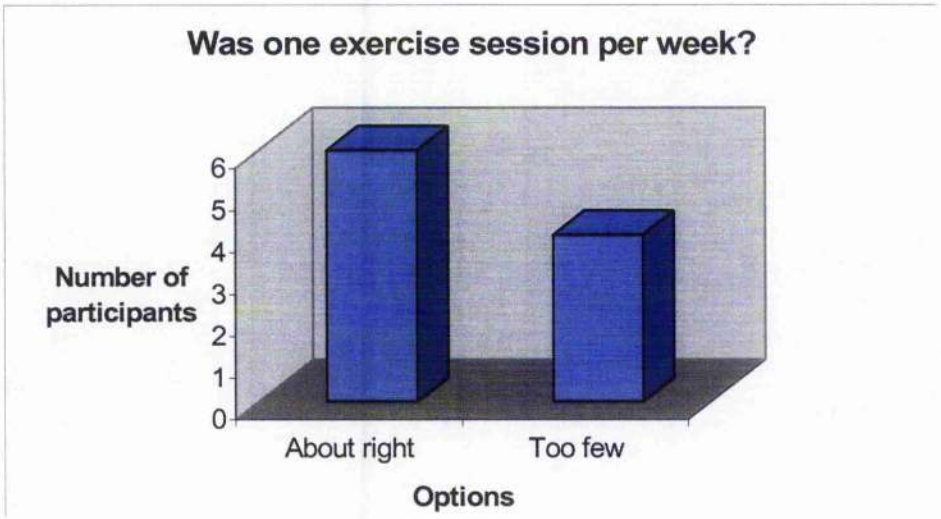


Figure 3.1b Illustration of participants perception of the frequency of the sessions



Relevant comments made during the one to one interviews included:

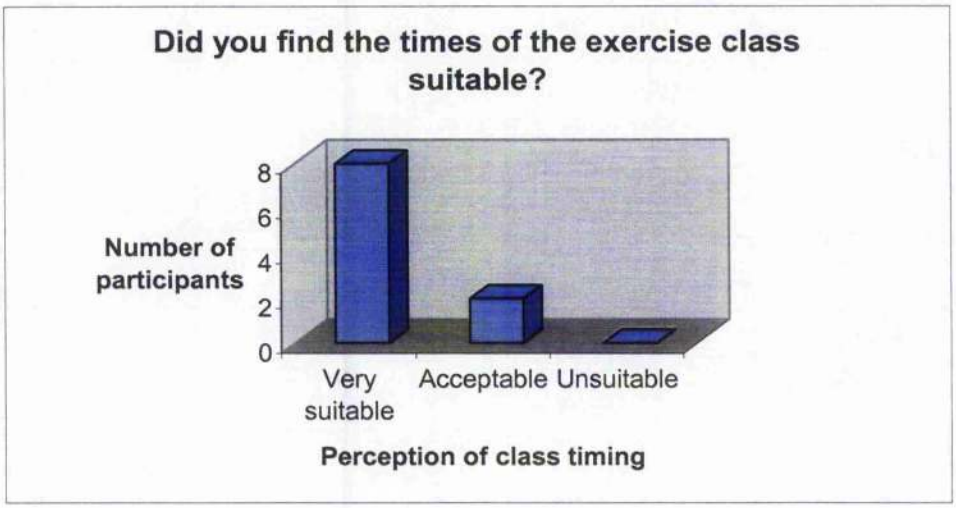
' *I think I should be doing more throughout the week, not just the once a week' (P1)*

' It hasn't been for long enough or frequent enough' (P3)

Timing of classes

Many disabled people rely on the support and availability of others in order to access opportunities such as the 'adopt a lifestyle' project. If programmes are not suitably timed then it may act as a barrier to participation(Scot Porter Research and Marketing Ltd, 2001). The 'adopt a lifestyle' programme started at 1pm every Thursday. When asked about the suitability of the timing of the class the majority of the people replying to the questionnaire said that 1pm was very suitable (80% n=8). The other 20%(n=2) responded that it was acceptable (Figure 2). Whether those individuals who failed to adhere to the programme found that the lack of flexibility in relation to the timing and frequency of the sessions affected their ability to participate is examined later.

Figure 3.2 Illustration of participants views about the timing of the exercise class



Cost

There is some research to suggest that disabled people generally have lower disposable incomes than non-disabled individuals, (Coalter 2000). It was therefore important to try and establish whether participants felt that the cost of these sessions was appropriate/affordable as this could have had implications for future planning. During the one to one interviews interviewees were asked if they felt the sessions were value for money.

Responses were as follows:

'Definitely, no way you'd get that anywhere' (P1)

'Yes especially with the passport card....even without it' (P2)

'Oh yes absolutely, although it's a pity I had to pay £20 for a taxi' (P3)

' Alright' (P4)

'Yeah' (P5)

From the responses given it could therefore be assumed that for those who attended regularly the session had been appropriately priced and did not appear to be a barrier to participation. Cost is looked at in relation to nonadheres later on.

Variety of activities on offer

Lockwood and Lockwood (1997) and Doll-Tepper (1999) both cite unsuitable activities and inflexible programmes as factors that may affect participation for disabled people. For an intervention to be successful the facilities or services put into play need to meet the participants needs and wants.

During an interview with one of the key members of the multiagency group, the importance of devising a programme that would provide participants with choices, so those individuals could make decisions about participation and direct these decisions for themselves, was highlighted (Appendix 8).

'what we've tried to do is offer a range of activities and to offer a choice and actually find out what they want to do themselves so I think the most important thing is offering choice and then actually letting people direct it from what service there is and what we provide.' (MA2)

In the context of disability it is particularly important that health promotion programmes emphasise self-management, active coping skills, and empowerment (Hughes et al 2003). Positive health outcomes among individuals with physical impairments have been noted when self-efficacy (Bandura, 1997), is enhanced (Hughes et al 2003).

As mentioned previously the 3 hour sessions were outlined as follows:

Hour 1: Leisure based activities

Hour 2: Gym inductions or Health information workshops

Hour 3: Structured circuit based class

As the pilot progressed the level of choice during the first hour became quite limited. Much of the game equipment was damaged therefore the only activity on offer was Boccia. However despite this, from an observational point of view, the social benefits derived

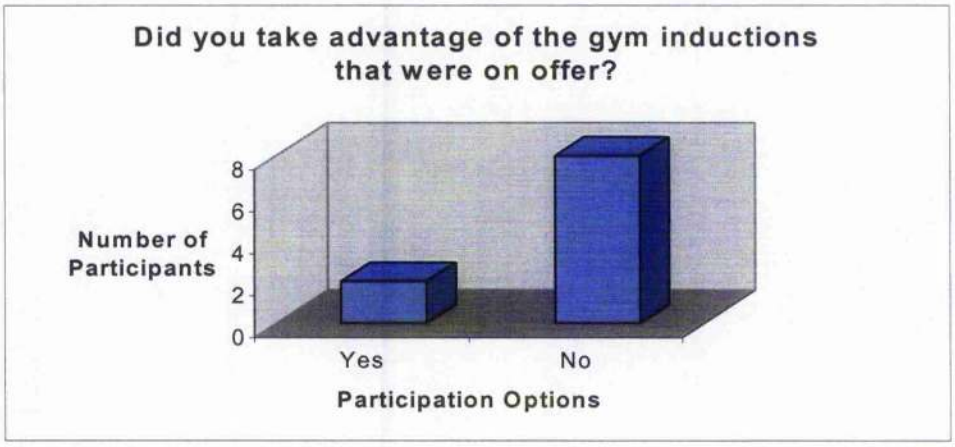
during this hour were very apparent. There was a great deal of interaction taking place between participants themselves and between the coaches and participants.

The second hour as outlined was expected to offer health education workshops and gym inductions. The advantage/potential benefit of offering the gym inductions was that once inducted, those who had taken up the offer could potentially participate in activity independently without the reliance on a structured session thus increasing the potential for sustainable activity. Of the 10 respondents only 2 people attended an induction (figure3). When the participants were asked why they had not opted for an induction, the majority of responses indicated that lack of accessibility had been a barrier.

'I can't manage that cause I can't stand' (P1)
' Only thing I can use, the recumbent cycle was upstairs which wasn't good' (P4)

Whilst the offer of gym inductions had a great deal of potential to increase physical activity participation, the equipment and the layout of the gym within the pilot venue were inappropriate. The resistance machines were not suitable for the majority of those attending the session. The seats could not be removed and were therefore inaccessible to wheelchair users. Many of the resistance machines had little or no support at the sides to assist those with postural or balance problems and the levers rarely worked independently making it difficult for those with hemiplegia or hemiparesis. Although potentially many disabled people could gain some benefit from participation in cardiovascular activity, for those who were unable to exercise outwith their wheelchair, the gym had no cardiovascular equipment available to them (for example an arm or leg ergometer). Those with balance problems and those with limited mobility in their legs potentially could have utilised the recumbent cycles. However, these were positioned upstairs and could only be accessed by climbing a narrow winding staircase. These issues impacted on the degree of choice available during this second hour also. Figure 3.3 illustrates the numbers of participants undergoing gym inductions.

Figure 3.3 Illustration of the number of participants who undertook a gym induction



The educational talks were given by a variety of health professionals. They covered topics such as nutrition, alternative therapies and physical activity. The one to one interviews asked participants about these workshops and whether or not they had found them beneficial. Comments included:

' I think they were very useful, the relaxation and aromatherapy last week were very good' (P1)

'Some things you know, some you you know nothing at all…… nutrition talks were a good reminder but mostly common sense' (P2)

' I found them alright' (P3)

' They were quite good' (P4)

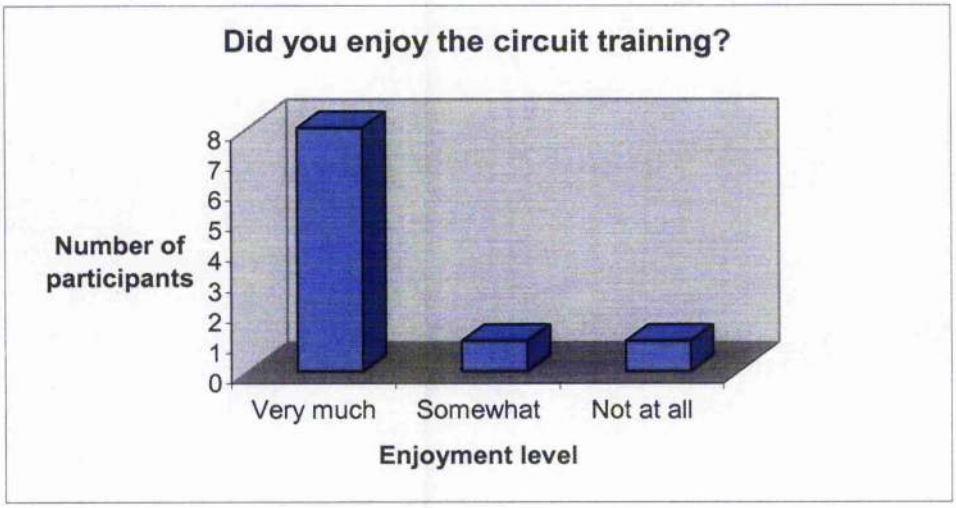
' I liked the talks' (P2)

During the sessions, the talks did generate discussion and the participants were able to ask questions pertaining to their own particular needs, however from an observational

perspective it did not appear as if there were significant amounts of new learning taking place.

The last hour was the structured circuit based class, which took place in the dance studio within the centre. When asked 80% (n=8) of respondents replied that they had really enjoyed the class, 10% (n=1) somewhat enjoyed it with 10% (n=1) responding that they had not liked it at all. Figure 3.4 illustrates participants views of the circuit class

Figure 3.4 Illustration of participants' enjoyment of the circuit class



Intensity

The participants were asked to comment on the appropriateness of the intensity. 60%(n=6) responded that it was about right 20% (n=2) reported it was too easy, with 10% (n=1) reporting that they had found the class too difficult (figure 5). One participants comment was that the class was:

'Too much, exhausting, utterly exhausting' (P3)

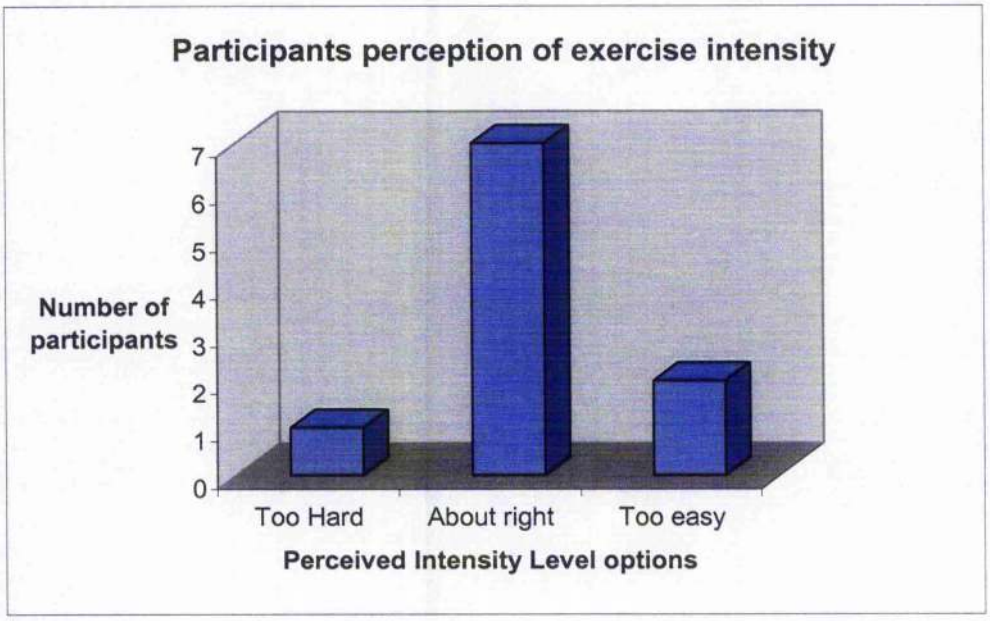
The group was quite varied in the range and level of impairments experienced, making it hard to tailor the class to suit everyone. The coaches themselves were aware that for some the class was too easy but that for others increasing the intensity may have been off putting:

' Some of the more able-bodied participants felt that it was a bit too easy' (I2)

The variety of impairments within the class setting was identified by one of the coaches as something that they had found quite difficult when trying to devise the sessions.

'Quite a range of disabilities in there which was sometimes quite hard. (I2)

Figure 3.5 Illustration of participants perception of the intensity of the exercise class



Exercise Environment

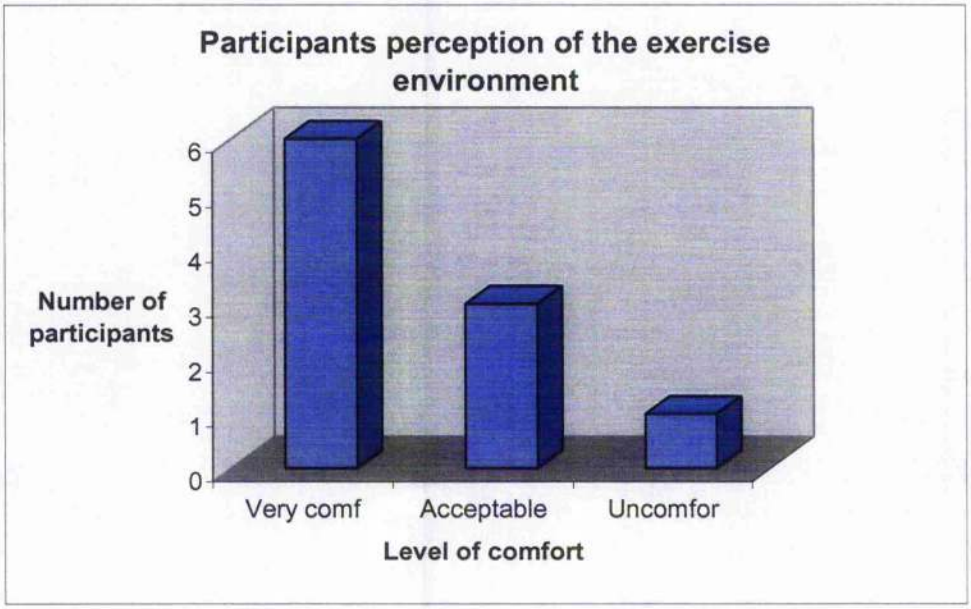
When asked to comment on how comfortable the exercising environment had been, 60% (n=6) of the participants responded that it had been very comfortable, 20%(n=2) said acceptable whilst 10 % (n=1) found the surroundings very uncomfortable (Figure 6). One person remarked that:

'It had too many mirrors' (P3)

Whilst only one participant identified this as an issue, it is definitely note worthy. The messages disabled people often receive about themselves can be quite negative. Within our

society there is an huge emphasis placed on appearance and ability and those that don't fit with this perceived 'ideal image' can be left feeling that they are somewhat different or lacking. Whilst this is true for non-disabled people and disabled people alike, the further people are from the 'popular' strand the more likely their self-image will suffer. The purpose of mirrors within physical activity classes is to increase the instructor's visibility and allow greater opportunity for participants to observe the desired action. However some people may find it off putting to watch themselves whilst participating. Instructors should be aware that mirrors might be a barrier for some people and look at ways they could adapt the class to minimise exposure. For example instructors could perhaps positioning themselves between someone who looks to be uncomfortable and the mirror, or turn the class round now and then so that time spent in front of the mirrors is varied. Figure 3.6 illustrates the participants' perception of the exercise environment.

Figure 3.6 Illustration of participants' perception of the exercise environment



Difficulties

When participants were asked to comment on any difficulties they experienced during the sessions there didn't appear to be anything that was causing anyone significant problems. Exercises were adapted to suit the individual or individuals left what they felt unable to do. One individual did however state that they felt tired and this was causing them difficulty during the session. This was the same individual who reported that they were finding the

session 'too hard'. Further adaptation to the class would perhaps have been appropriate for this individual for example slightly longer rest periods.

'No, anything I couldn't manage I just didn't do' (P2)

'I couldn't hold the hand weights, but that was adapted and I liked the idea of that.....given alternatives although basically the same exercises...thought that was really good' (P1)

'Uncorodinated. No apart from being tired. I can't think of anything else. Just weary.' (P3)

'No not really, perhaps with one side being weaker than the other.' (P2)

'No' (P4)

Injuries

It was felt important to record any injuries or pain people may have experienced as a result of the class. Participants were asked whether they had experienced any injuries or pain, most respondents replied no. Those that did, reported some stiffness, which had lasted no longer than a day and was mainly put down to using muscles they had not used in a while.

'Some weeks yes. In my back, my arm and shoulder but I've got pain anyway and last week see my legs....but that's from not using them.' (P1)

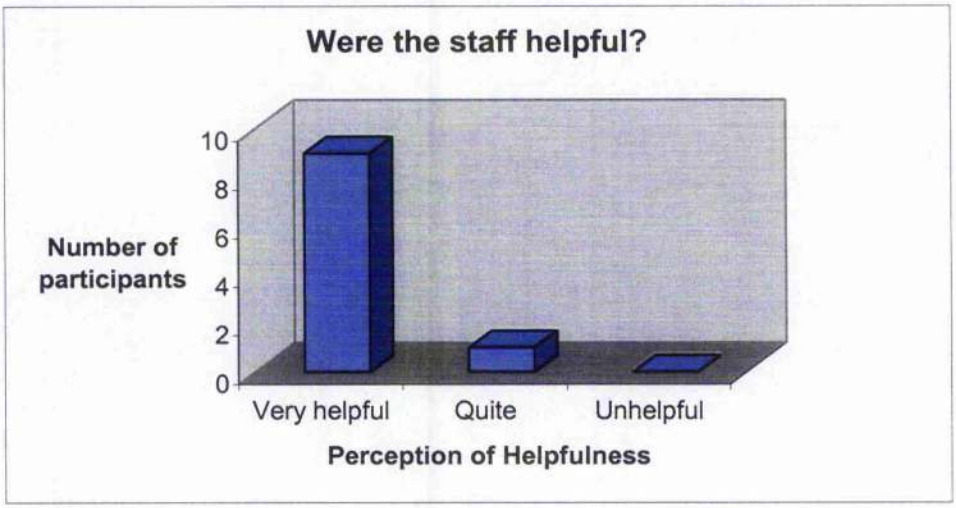
'.....The next day it eased off a bit.' (P1)

The coaches involved in the delivery of the sessions were asked if they had at any point had any concerns about the safety of the participants. All replied that they had no concerns.

Staff

The participants were asked how helpful they had found the staff participating in the pilot both within the questionnaire and during the interviews. The questionnaire responses are shown in figure 3.7.

Figure 3.7 Illustration of participants perception of the staff



Comments about the staff included

'Friendly. They made you feel quite at ease. That's quite important when you are coming along to something like this, no matter what your disability or whatever is. Able to have a laugh, able to at any point too much I could say to them and you didn't feel .....and I thought that was important. I really feel they were on top of what they were doing as I said they were able to identify when I wasn't right and sort it out.' (P1)

'Good, very helpful' (P4)

'Very friendly....just getting to know them and now there is a break. Very nice. Very informal.' (P2)

Accessibility

Physical barriers can hugely affect the likelihood of participation amongst disabled people (Rimmer et al., 2000). For many individuals it is often not a lack of willingness to participate that is the hindrance but more often the design of a facility itself. Narrow doorways, high reception desks, benches in the middle of changing areas, poor lighting, excessive background noise and heavy doors can all contribute to an inaccessible facility. Transportation issues in terms of cost and access has also been cited as a barrier to participation (Depauw and Gavron, 1995). Therefore making the 'adopt a lifestyle'

programme as accessible as possible in relation to the aforementioned aspects is one way of perhaps increasing participation.

The questionnaire posed four questions in relation to transportation issues. The first related to travel time. The second question asked how easy it had been to get to the centre by public transport. The participants were also asked for their views on travel costs and whether they would have used a transport system had one been available. The results are illustrated in figure 3.8a,b,c and d.

Figure 3.8a Illustration of participants perception of the travel time to the centre

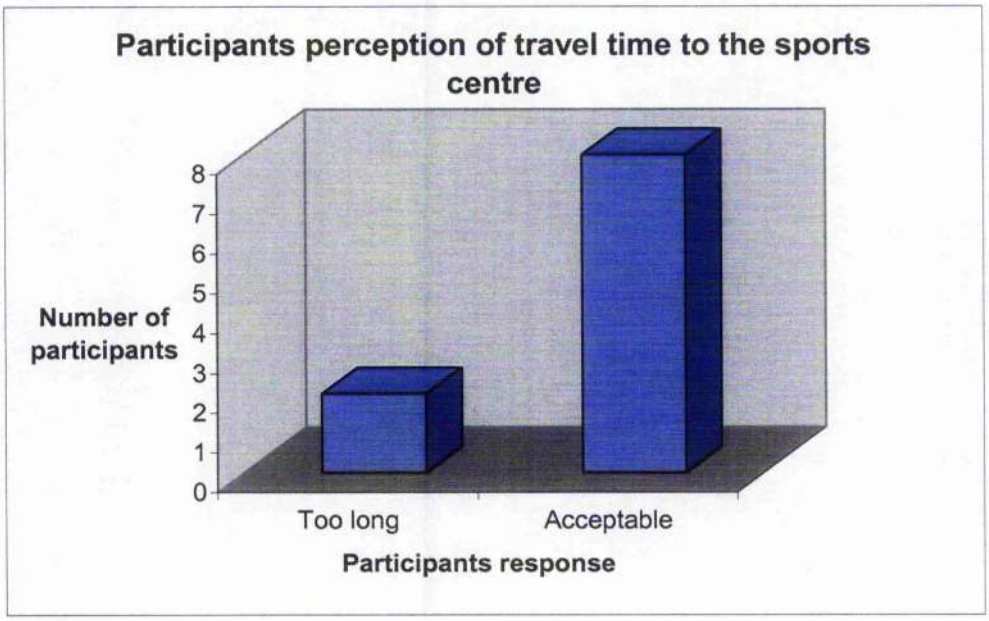


Figure 3.8b Illustration of how easy participants found it to get to the sports centre by public transport

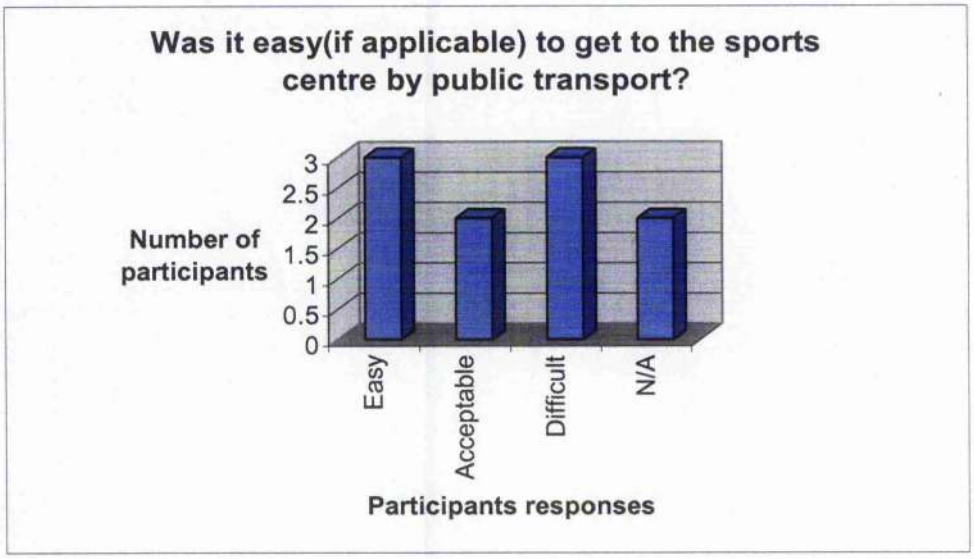


Figure 3.8c Illustration of participants perception of the cost of travel to the centre

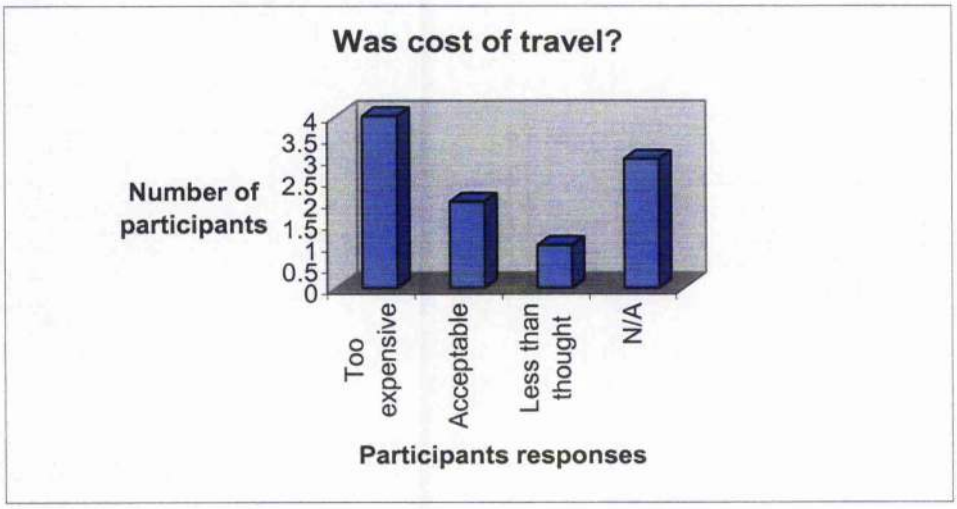
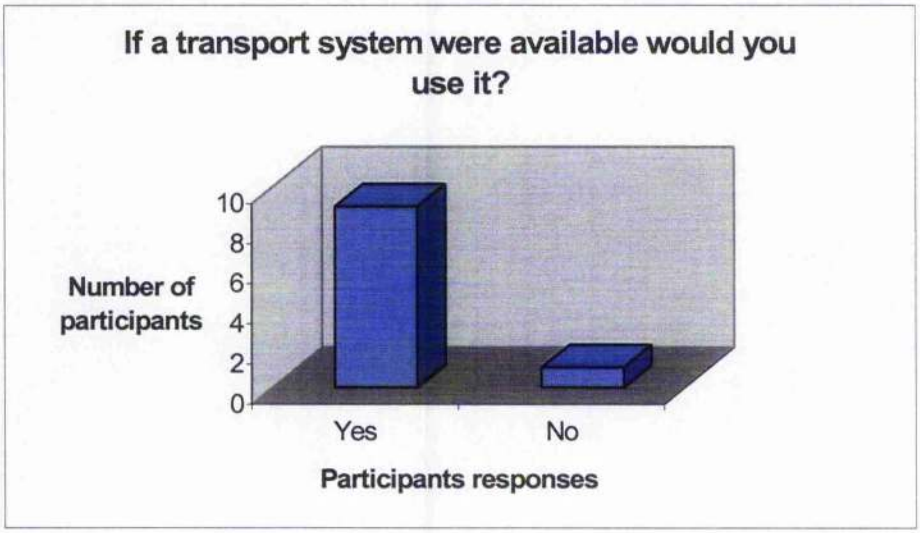


Figure 3.8d Illustration of whether participants would utilise transport to the centre if it were on offer



During the interviews the following comments were made with regards to transport:

'No direct bus route, need to go into town.....it would take me all day to get so I would say that's my biggest stumbling block' (P1)

'My husbands been running me, not very easy I have to say' (P1)

'It was easy for myself but it would depend on where you live whether it's difficult or not' (P2)

'Pity I had to pay £20 for a taxi' (P3)

'Got a car so it's easy' (P4)

Transportation to the centre did appear to be a bit of an issue for the participants. One participant indicated that they would prefer it if the sessions were run in centres closer to their home.

'I'd like to go to an exercise class like this but near me.' (P3)

This comment was reiterated by one of the coaching staff when asked as to how the pilot could be improved and what feedback they had received from the participants:

'Feedback was that some of the problems were the travelling and things, costing a lot, so if we could set up in other areas that would be ideal for them. (I1)
I think that if they provided it five days a week nearer their homes then they'd come five days a week so it's certainly worthwhile.' (I1)

'Improvements would be if you could set it up in different areas in Glasgow, it's going to reduce some barriers for certainly some of the adults who come to our class, get more numbers coming along.' (I2)

In addition to asking about accessibility of the centre in relation to travel, participants were also asked during interviews to comment on how accessible they had found the centre itself. There were very few negative comments except with regards to the gym and also the accessible toilet. During the eight week pilot at least two participants were unable to get out of the toilet. One participant had to break the door in order to get out whilst the second participant had to wait around 20 minutes until a member of staff came and gave assistance.

' I went into the disabled toilet and got stuck getting the door open. That's why I go to the other one now.....I couldn't pull it across' (P1)

'I think most people would find the disabled toilet very very stiff.....there was no way I could open it. Now I just use the toilets in the swimming pool.....It's really heavy, one of the attendants heard me shouting as I couldn't even bang the door. He got the centre manager who explained that because of fire regulations the door had to be that heavy. He said he'd put a new runner on it but whether he has I don't know, but that was the only problem.' (P2)

This was an important issue. Obviously there are regulations that have to be enforced for safety reasons. However, those designing or modifying service provisions should ensure that they consult with a range of disabled people in order to ensure that both money and

time are not wasted on a service/ facility that can not be utilised. This is particularly pertinent given that the final stage of the Disability Discrimination act is now in force.

Staff training

Another of the objectives as outlined by the multiagency group was to provide effective staff training. 14 individuals attended a 3 day course which provided those who attended with good insight into what is required when teaching to people with a variety of disabilities and how to adapt teaching methods. A great deal of time and effort was required into planning the exam work and developing a suitable inclusive programme that had to be taught on the day of the exam. However determining how effective the training was in preparing the coaches for the pilot was difficult, as those involved in the pilot had all been working in the field of disability for a number of years. There was a high failure rate amongst those attending the course, other than those who had prior experience in the field and myself. Only six of the fourteen successfully passed. The course was relatively short in duration and therefore it was recommended that in order to ensure that future participants get the most they can from the course, that they be actively encouraged into gaining some experience in the field of disability prior to or immediately after the course.

Impact

This section looked at the following:

- Percentage recruitment (How many people attended as a percentage of the number of flyers distributed)
- Perceived benefits of participation
- Reasons for non adherence to the programme

Percentage recruitment

300 application forms were administered to 14 centres within Glasgow. The centres targeted were already on either Cultural and Leisure's databases or known to the Community Physical Disability Team. Of the 300 applications sent out, Cultural and Leisure received 31 returned applications (10%). Of those 31 applications over the eight weeks a total of 26 people actually attended the programme (9%)

Unfortunately, due to lack of resources and time within the multiagency group, the applications were only administered a week before the closing date highlighted on the form. It was also suggested by those involved in the administration that had there been more time and more people involved in the distribution process, far more centres could have been targeted which may have increased the numbers attending.

Those who took part in the interviews were asked how they had heard about the project

1- Nufield Hospital	1- Carer
1- Fernard St Complex	1- Swimming lessons
1- Members of GCVS	1- GP referral

The referals came from a number of sources but there was only one referal from each source. However it should be noted that this data relates to only 6 of the original 31 who registered and it is therefore not a good indication of the source of recruitment or numbers from each source.

Perceived benefits

The perceived benefits will be outlined as those perceived firstly by the participants and then the coaches.

Participants

The Participants questionnaire addressed perceptions of benefits in the areas of fitness, anxiety and self-confidence. These results can be seen in Figure 3.9a,b,c

Figure 3.9a Illustration of participants perception about changes in their fitness levels

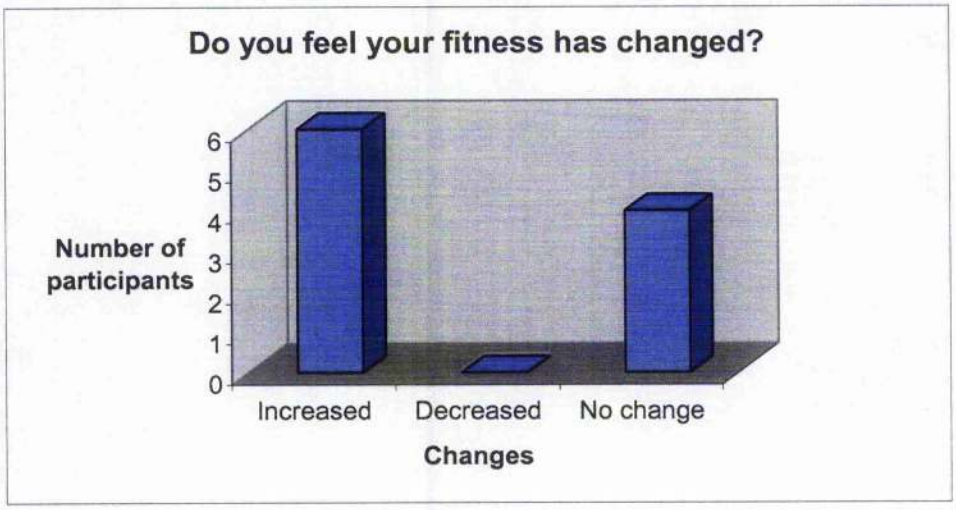


Figure 3.9b Illustration of participants' perception about changes in their levels of anxiety

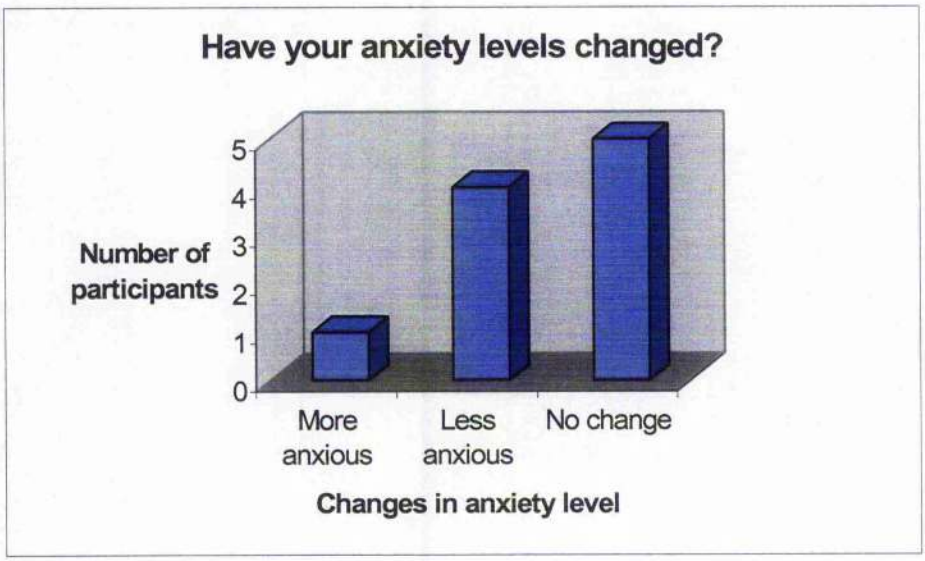
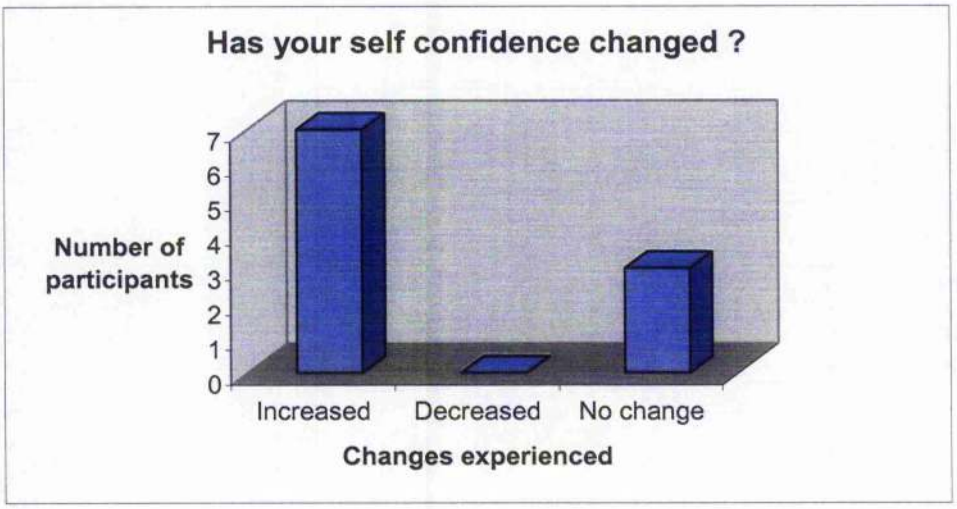


Figure 3.9c Illustration of participants perception about changes in their levels of self confidence



During the interviews the participants were asked ' what benefits if any have you gained from participating in the sessions?' the replies included:

'Physical, well I do think I'm a wee bit more.....I've benefited from the exercise.....ever so slightly though cause I think I should be doing more throughout the week not just once a week. When I walked up the hill, I've got a hill when I come out of my street and I don't feel so out of breath so obviously it must have helped in that someway. Also socially and with my confidence' (P1)

'Meeting new people and friends. Having time on my own. Fills up the afternoon.....it's been good.' (P2)

'Well I like being with disabled people. I'm quite paranoid about people looking at me so it's refreshing to be with other people who might feel the same' (P3)

'Sight of the swimming pool has made me interested in swimming again.' (P3)

'Getting out, getting out of bed' (P4)

' Made you getting to know people more than anything else. Helps that way' (P5)

Views of the coaches

Two of the three coaches were asked to express their views on the benefits that they perceived the participants to have gained over the eight-week period.

'The benefits they've experienced is that they have been made aware of what they need to do to improve their lifestyle, their health and fitness, doing the talks has certainly opened up some of their eating habits and the exercise broken down into like how many times a week and things like that.....I definitely think they've learned things' (I1)

'Benefits they experienced were in their fitness, you could definitely see improvements' (I2)

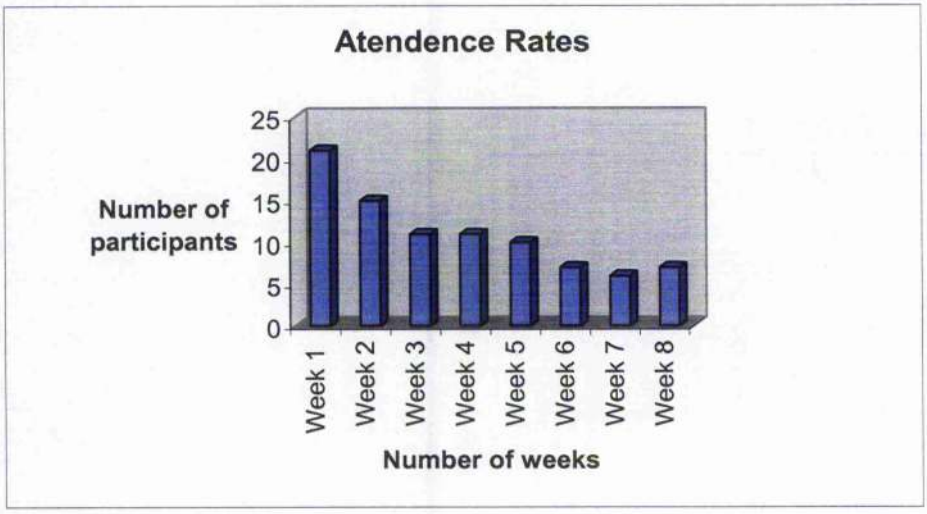
From the interviews what was most apparent were the definite social benefits that the participants gained. Whilst some reported physical benefits, the main points related to the importance of meeting new friends and interacting with others. They reported enjoying a level of independence, gains in self-confidence and feeling less anxious, all of which undoubtedly contribute in some way to improving quality of life.

Individuals were asked a question relating to support and whether they would have liked their family and friends to join in. 6 of the 10 individuals responded yes.

Non adherence

The last area to be addressed in the impact section was reasons for non-adherence. During the first week of the pilot there were 21 participants, however as the weeks went on the numbers dropped to around a third of that (figure 3.10).

Figure 3.10 Illustration of the attendance rates during the 8 week pilot



In an attempt to discover why people had stopped attending the pilot, a questionnaire similar to that administered to those attending the programme was drawn up. Those whom had not adhered to the programme were contacted by telephone (if numbers were provided) and asked if they would mind being asked to fill in the form over the phone. Some agreed (n=2) others decided to give some verbal feedback (n=4) rather than completing the questionnaire.

The results produced by the questionnaire are outlined as follows:

When asked how easy it had been to get to Tollcross both participants replied that it had not been easy at all. Both respondents reported the inconvenience of travel as a reason for non-participation as was cost of travel for one of the two respondents. The participant reporting that cost of travel was problematic said they would have used a transport system if one had been made available. The other respondent said that cost was not a problem just the inconvenience of the travel. When asked if they would have attended had the programme been run in a centre closer to their home, they replied 'Definitely'..

In terms of the centre itself the questions relating to the accessibility of the centre were answered positively. Neither respondent found the sports centre environment off-putting or

difficult to manoeuvre about in and these were not reported as reasons for non-participation. Both had enjoyed the activities on offer, but had found the timing of the class unsuitable. They both agreed that the duration of the sessions was about right.

One of the participants wanted to express that the staff had been very helpful and that he felt that the team games had been excellent for those with more profound disabilities. He expressed that he would attend again should the programme be provided elsewhere. He also implied that a choice of days would have perhaps increased the likelihood of him attending.

The remaining non-adherers gave the following bits of verbal feedback

'The reason I stopped attending was that I go to an outreach programme on a Friday and have a home based exercise programme. I just felt it was very repetitive'

' I felt the group was too big '

' Felt out of place with all the wheelchair users, prefer an inclusive programme'

One woman expressed her concerns about the level of experience the coaches had. She herself had a neurological condition and felt that the exercise class at the end had not been sufficiently thought through. She expressed her concern that those in charge were not physiotherapists and that the exercises being performed may aggravate some of the participant's conditions. She decided that the programme was not for her and that she would continue a more supervised rehabilitative programme at the Royal Infirmary.

Those who chose not to continue participating all identified barriers, which had contributed to their non-attendance. Some were personal and thus were not within the scope of the multiagency group, but some could be addressed when looking at future planning. Several non-adherers mentioned limitations in terms of the choice of venue, which supported the views expressed by those who had continued to participate. Limitation in relation to the days of the week the session was run and class timing were also mentioned.

Outcomes – Physical self worth

The final section of the evaluation looked at the outcomes of the pilot. This was used to establish firstly whether the 8-week programme had had any measurable effect on the participants' levels of Physical Self worth and or on their degree of exercise knowledge Secondly, whether or not the individuals who took part were still participating in physical activity.

After carrying out statistical tests on the data produced it became apparent that there was no significant improvement between the pre programme levels of physical self worth and those at the end of the project (p=0.494 95%CI (-6.23,3.37)). However these results differ from the perceived benefits expressed by the participants themselves, which may indicate that the questionnaire used to assess this area was inappropriate. During discussions with the participants, many expressed their dislike of the form and many were initially confused as how to fill it in. On reflection, the questionnaire should have been piloted prior to use with this population in order to assess its appropriateness.

Differences in Physical Self Worth between Adherers and Nonadherers

When examining the levels of Physical Self Worth it was decided that it would be useful to see if there was a difference in the pre exercise levels between those who adhered to the programme and those who did not. This time a two-sampled t-test was carried out on the data. The results showed no significant difference (p=0.30 95%CI (-9.1, 3.3)) between these two groups in terms of their pre exercising levels of Self worth therefore no conclusion could be made as to whether this played a role in their decision not to continue with the pilot.

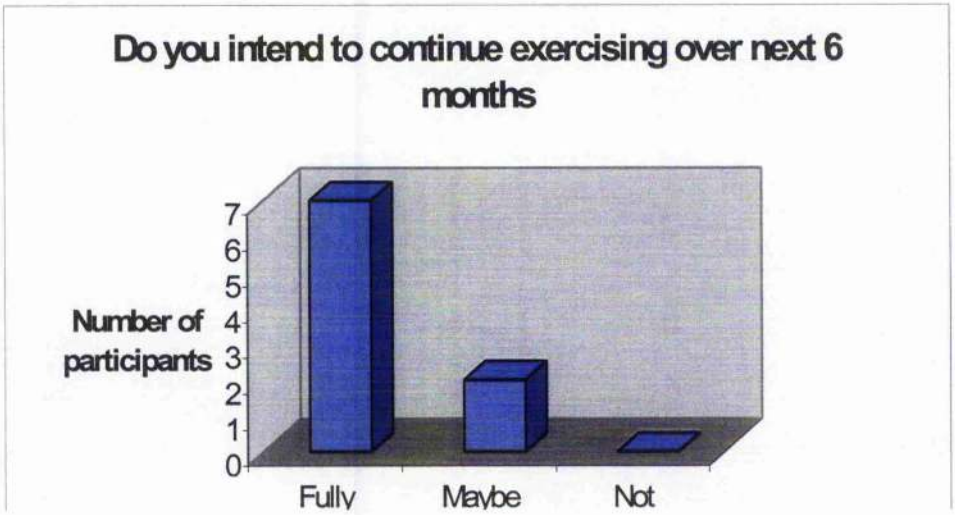
Outcomes - Exercise Knowledge

Again as with the levels of Physical Self Worth there was no significant difference when comparing the pre and post results (p=0.296 95% CI (-0.601, 1.601)). This however could be attributed to a ceiling effect as a result of those tested scoring high initially. The mean score from the pre tests was 10.33 out of a possible 12, which did not leave much room for improvement.

Exercise Intentions

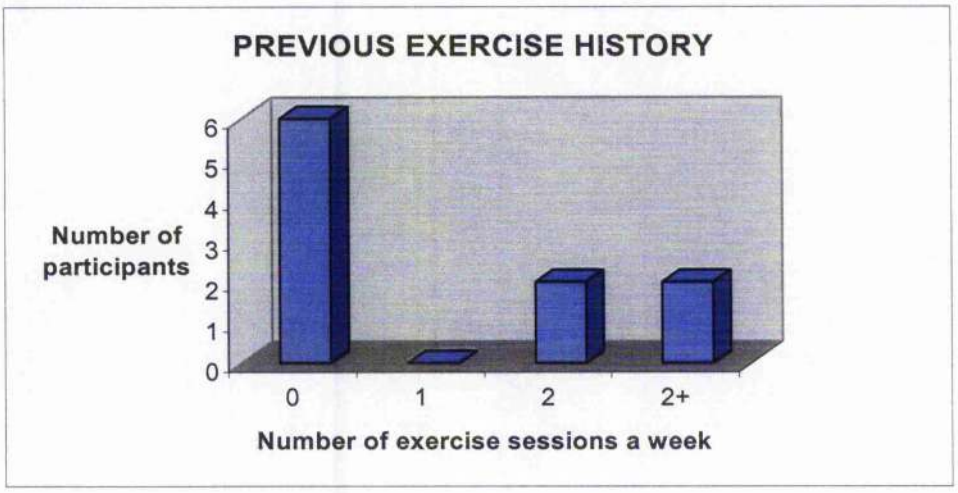
The participants were asked within the questionnaire whether or not they were intending to continue exercising over the next six months. The responses are illustrated in Figure 3.11

Figure 3.11 Illustration of participants intentions to continue exercising



7 of the 10 indicated that they fully intended to continue participating, 2 thought they most likely would and one of the 10 respondents expressed that she had fully intended to continue but that at present she had been advised by her Doctor to refrain due to medical concerns. She did however say that she would return after she had been given the all clear. The programme obviously did manage to influence the behaviour of the participants involved in the short term, as the majority of these participants had previously done no activity (Figure 3.12). It was hard to determine whether the change was due to a change in attitude towards activity, by providing a means of participating or a combination of the two. Regardless, the main objective of increasing participation and opportunities for these individuals was achieved.

Figure 3.12 Illustration of the participants previous exercise history



Follow-up study

Given that the timeframe allowed for it, it was felt that it would be useful to follow up the participants 3 years on. This was to see whether or not the original participants were still participating in physical activity; if so how often and what types of activity were they doing, and if not how soon after the pilot did they stop and why.

As outlined above 7 of the 10 participants indicated that they fully intended to continue participating in physical activity in the 6 month after the pilot. The follow-up questionnaire therefore firstly asked about their physical activity behaviour since the pilot project.

8 questionnaires were sent out and of that 4 responded. There was a 50:50 spilt in terms of those who had continued and those who hadn't. During the pilot it had been established that 6 of the 10 had previously not done any physical activity, 4 reported that they had been active two or more times a week. Because the follow-up questionnaire had been designed to be anonymous there was no way to establish whether those who had maintained activity had been those who were active before the pilot or those who had not been. On reflection it may have been more beneficial to the findings if the questionnaires had been coded so that comparisons could have been made. However the follow-up questionnaire did ask if the pilot had helped them to become more active. Both of the participants who were still active indicated that yes it had.

Those who were still participating, both indicated that they participated in physical activity once a week, one person did swimming, and the other indicated that last year they had been swimming once a week, but at the moment they did badminton. Of the two individuals who indicated that they had stopped, one person said that this had happened straight away because they lost interest, whilst the other indicated it had been 3- 6 months later and cited lack of opportunity once the class ended as reason for this. Both of those who had ceased exercising indicated that they would be interested in becoming physically active again.

All participants were asked if they thought there should be more opportunities available for disabled people to participate in physical activity. All 4 indicated that yes there should be. When asked if more needs to be done in order to make it easier for people to become more active again all 4 said yes. A list of suggestions was given to participants as to what might enable people to become more active. Table 3.4 shows what individuals taking part in the 'adopt a lifestyle' pilot thought would help people with a physical impairment to become more active.

Table 3.1: Table outlining what participants thought would enable people with physical impairments to become more active

Suggestion	Frequency	Percentage
Equipment suitable for those with physical impairments within leisure facilities	4	100
Better trained staff	2	50
More information available to individuals and parents/carers/support workers about the benefits	3	75
More projects like the 'Adopt a lifestyle' class	4	100
Assistance with transport	3	75
Reduced costs for physical activity	2	50
Exercise consultation (one to one advice with a trained exercise counsellor)	3	75
None of the above	0	0
Other	0	0

Everyone felt that to improve participation among those with a physical impairment, it was important that leisure centres have equipment suitable for those with a physical impairment. Similarly 100% of respondents felt that it would be useful to have more projects like the 'adopt a lifestyle' pilot. 75% (n=3) felt that it would be beneficial to have an exercise consultation, assistance with transport and also more information available to individuals, parents/carers and support workers about the benefits of physical activity. 50% of respondents (n=2) thought that reduced transport costs and better trained staff would enable people to become more active.

Discussion

The multi-agency group had requested that the 'adopt a lifestyle' pilot be evaluated in order to assess how well it had met the objectives they had set out during the planning process and whether it met the needs/wants of the target audience i.e. those with a physical impairment. In devising the evaluation it was decided to look at various aspects of the pilot, namely the process by which it evolved, the impact and also the outcomes of participation.

Process

In terms of structure and input the pilot was relatively successful. There had been some teething problems when devising the pilot that had perhaps contributed to the low numbers of participants attending for example lack of time meant that the resources were not as widely distributed and there was not much time between the flyers being distributed and the closing date for registration. In terms of overall cost the pilot was identified as being comparable to other such initiatives, however a large proportion of the overall spend had been on purchasing training so that there was a pool of staff that could deliver sessions to those with a physical impairment. Unfortunately only 6 people passed this training, 3 of who already had a specific remit for teaching physical activity to disabled people. This meant that a lot of money was spent; yet the capacity to increase opportunities for disabled people was limited because the training did not yield large numbers of newly trained staff.

Ensuring that there is qualified staff in centres is central to the pilot being able to be rolled out. It was therefore recommended to the multi-agency group that before staff enrol for the YMCA module in the future they should spend some time gaining experience working with disabled people, perhaps shadowing the GCVS sports team. It was also suggested that

the agencies involved in devising the pilot could allocate increased financial resources to members of GCVS sports team to run ongoing in-house training for leisure staff to help develop their skills. Additionally, to ensure resources are not wasted unnecessarily, it was recommended that individuals who fail the YMCA module on their first attempt be actively encouraged to resubmit paperwork and resit any practical exams.

The pilot provided one session to be run once a week at a set time in one centre within the city. For the most part people seemed happy with what had been provided. The majority of those who complete the questionnaire had indicated that the duration and frequency of the session were about right. However, the numbers were quite small and certainly with regards to frequency there was nearly a 50:50 split between those who said one session was 'about right' and those who said it was 'too few'. One of the main complaints about the pilot was that some people had not found the facility easy to get to and this was cited by some of the non adheres as a reason they had stopped participating. There were indications that had the session been run in facilities nearer to people's homes they might have found it easier to continue participating. It was recommended that ideally the programme should be run on several days of the week, at a variety of times, in several locations within the city to potentially open up the project to a far wider audience and accommodate those who indicated one session a week was 'too few'. The difficulty however is in justifying the costs given the low numbers who attended the pilot.

With regards to the activities on offer, the choice had through circumstances become quite limited. Most people had enjoyed the exercise class and had found the intensity about right. One non-adherer had cited as a reason for non-participation that:

' Felt out of place with all the wheelchair users, prefer an inclusive programme'

This perhaps needs to be taken into consideration. The programme was set up because there were few opportunities for those with a physical impairment to take part in physical activity. However it should be recognised that individuals with a physical impairment are not a homogenous group and indeed there will be differing levels of capabilities. Indeed one member the staff talked about the difficulty in devising the exercise class given the range of impairments within those attending. Whilst the exercise class was well received and may be suitable for the vast majority of those with a physical impairment, another

means of increasing opportunities would be to see how mainstream classes could be adapted so that individuals with physical impairments could be accommodated. Similarly levelling the provision for those with physical impairments may allow appropriate tailoring of classes and also provide a means of progression for those wishing to do so.

As part of the programme of activity, gym inductions were offered; unfortunately few people were able to use the gym because of inaccessible equipment and poor positioning of certain pieces of equipment. Whilst the offer of a gym induction has the potential to increase and promote sustainable independent physical activity, it was recommended that gym inductions should not be offered if gyms were unable to support this. It was also recommended to the mulitagency group that every centre in Glasgow should to be issued with an arm/leg ergometer and at least one piece of muscle conditioning equipment suitable for those with a physical impairment to increase opportunities for those with physical impairments to utilise the gym. In the future, when planning the layout of gyms, this should be done in full consultation with a range of disabled people to ensure that pieces of equipment are not positioned in hard to access areas, which enable increased access.

Whilst the gym was relatively inaccessible, accessibility did not appear to be an issue for the centre as a whole, other than the accessible toilet, which was one amenity that individuals identified as being inappropriately designed. The door was far too heavy for most individuals to manoeuvre and often once in, users were unable to get back out. Fire regulations apparently stipulate how heavy these doors must be. However there are obvious health and safety concerns which arise if users are unable to get out of the toilet and there were no facilities within this particular toilet to allow the user to alert facility staff attention for example an alarm or buzzer. If options such as reducing density of the doors are not feasible then alternative mechanisms should be installed to help to combat any arising access problems. Again it would be appropriate in future to work in consultation with disabled people when designing facilities and amenities within facilities to ensure they fully meet the needs of disabled people.

Impact

As a percentage of the number of flyers administered the uptake by those with a physical impairment was low (10%). Of the 31 individuals who returned the questionnaire only 26

in total attended the pilot over the 8 weeks with a maximum of 10 attending regularly from week 3 onwards. The impact in terms of increasing participation was therefore fairly limited. Whilst the provision of the pilot itself did increase levels of participation amongst those who attended regularly, the low uptake and adherence levels limited its overall impact.

Lack of time and resources were highlighted by one member of the multi-agency group as hindering the advertising of the pilot, which may in turn have impacted on the uptake rates. Whilst this is entirely plausible, it was put to the multi-agency group that in addition to increased targeting, given the number and often the complexity of the barriers facing individuals with a physical impairment that the use of flyers alone may be insufficient to encourage participation in physical activity programmes. It was suggested that that forging closer links between those delivering sessions and services could be a more effective means of targeting individuals. Having coaches going out into the day centres and other venues frequented by people with physical impairments and meeting with potential participants may be a way of breaking down some of the barriers related to self-consciousness and individuals not knowing what to expect. Those who attended the 'adopt a lifestyle' pilot regularly did seem to be aware be aware of the benefits of physical activity participation. However it may be that there is less awareness among those with a physical impairment as a whole or that these benefits are not applicable to them. This would require further investigation, however it may be that some general awareness raising about physical activity and the benefits that can be derived could encourage greater participation if the information were specifically targeted for individuals with a physical impairment.

In terms of perceived benefits, those who attended regularly did note some benefits in relation to their fitness, anxiety levels and self-confidence. These benefits were noted through a self report post pilot evaluation questionnaire, and whilst questionnaires such as the one used are fairly common place in 'real life' settings where physiological measurements are not always feasible, questionnaires can be subjective and there could be an element of the respondents answering in accordance what they perceive to be the desired outcome, particularly as over the course of the 8 weeks a personal rapport was struck between many of the participants and the coaches /evaluator.

Additionally although improvements were cited from the data produced by the questionnaire, physical benefits in terms of fitness levels were not highly reported during the one to one interviews and indeed many expressed that they had felt that the pilot had not been long enough or frequent enough for this to occur. ACSM guidelines currently state that the minimum recommended level of physical activity required to achieve health benefits is an accumulation of 30 minutes of moderate level activity performed on most days of the week. Although less is known about the amount of activity required to derive health benefits among disabled individuals, the provision of one three hour session a week for those with physical impairments is insufficient to meet the current ACSM guidelines for non disabled individuals and may actually be harder to adhere to. It was therefore recommended that if rolling 'adopt a lifestyle' out, at least one other session should be provided during the week in an attempt to maximise the benefits gained from participation and also allow more choice for those unable to attend the one allocated session.

What the one to one interviews did elicit that the post evaluation questionnaire was unable to capture was the definite social benefits that individuals derived as a result of participation. Several individuals reported that it was good to have something to get out of bed for, meeting new people, and renewing interests. All of these undoubtedly bring value to the lives of individuals and thus is extremely worthwhile. The one to one interviews definitely allowed for many issues to be explored in greater depth and probably provided information that was of the most value. The timescales between agreeing to take forward the evaluation and the start of the pilot were tight and there was little time to practice and validate interviewing techniques. Whilst the information gathered is still of great value and has validity, when transcribing the tapes, it became apparent that the formality required for this process was, at times lacking mainly due to the interviewers inexperience.

Contact was made with those participants who had consented to taking part in the evaluation but who had not adhered to participating in the pilot programme. Whilst there was no single factor, which emerged to explain the drop out from those who withdrew from the pilot inconvenience of travel did appear to be a factor. Several of those who had regularly attended had also mentioned that they found travelling to the centre difficult and would have preferred it if had been run closer to their homes. If transport accessibility and cost are clearly identified as barriers to participation then there are two possible strategies to overcome this:

a) Funding for transport should be built into the programme

b) The project should be run in a variety of centres across the city.

It was suggested to the multiagency group that in order to maximise the provision, running the programme on several days of the week, at a variety of times, in several locations within the city would potentially open up the project to a far wider audience and have a far greater effect. However to be cost effective, it would be important to first get a picture of the demand or as mentioned previously investing more time initially in raising awareness about the benefits and the need for participation, amongst those with a physical impairment and those who perhaps support them.

Promoting physical activity and encouraging adults to change from an established pattern of sedentary behaviour to one that is more active is difficult (Marcus 1995). Given the huge number of barriers facing disabled people, it could be anticipated that this change is even harder for this population. Research would indicate that the largest percentage dropout occurs in the first few weeks of participation (Taylor, Buskirk and Remington 1973) with approximately 50% of those starting a programme dropping out in the first 6 months. The high drop out rate may reflect the barriers facing this group and may therefore indicate the need devise interventions to identify those who may be loosing interest. Greater support mechanisms may be required to ensure individual's continuance for example buddying systems or allowing family and friend members to join in. 6 of the 10 participants who took part in the evaluation said they would have liked family and friends to join the session. Another support system may be to utilise the existing 'Live Active' scheme. The 'Live Active' scheme is a GP exercise referral service by which individuals can be referred to fully trained exercise counsellors to jointly develop strategies for increased physical activity participation. Given that this latter strategy was identified in the follow-up 3 years later by 75% of respondents as something that they thought would help people with physical impairments to become more active, would suggest this would certainly be a worthwhile route to explore. Although the numbers were small (n=3) and this may require further investigation to see whether this was indeed something more people with a physical impairment would agree with.

Outcomes

The outcome evaluation examined changes in physical self worth and exercise knowledge from pre pilot to post pilot. Because of a postponement of studies a long terms follow-up was also included in this section of the evaluation to establish whether participation had been maintained.

The results from pre pilot to post pilot did not yield any significant differences. For the exercise knowledge data this was explained by the high levels of knowledge people appeared to have prior to the start of the pilot and hence a ceiling effect may have occurred. With regards to self worth, the tool was not piloted before use and had to be adapted half way through. The small numbers as a result of low uptake may also have been responsible for the lack of significant results when examining the pre and post exercise tests.

However whilst it is possible that the tools for this component of the evaluation and the outcome measures were not perhaps the most appropriate, and/or the numbers too small, it is worth noting that differences between qualitative and quantitative data were also found in Maher's (1999) community setting exercise class evaluation. In Maher's evaluation the quantitative portion found few significant effects with none of the measures of outcomes showing any significant absolute change from pre class to post class. However the qualitative data in Mahers study did indicate significant results for the class participants, mirroring the findings of this study; compounding Maher's recommendation of using multiple methods when evaluating in a 'real life' setting. In both studies improvement was seen as the indicator of effectiveness or as the desired outcome within the quantitative methodology. However Maher stated that 'for this population lack of improvement does not necessarily indicate lack of effect'. From the one to one interviews carried out in the 'adopt a lifestyle pilot' there were a number of benefits highlighted, the value of which should not be diluted by the lack of supporting scientific measures. These benefits were real to the individual and are therefore as equally important as any desired change in outcome measurements.

The long-term follow-up yielded mixed results. Only 8 of the original 10 could be followed up and of them 50% responded. This may have been because in the 3 years since the original pilot people may have moved or become unwell. Had a long term follow-up

been part of the original thinking when devising the evaluation strategies could have been put in place to ensure information such as address change could have been accommodated e.g. contact details of evaluator given out at the end of the pilot with the proviso of notifying them should a move take place; annual contact with the participants by letter or phone. Of the 4 individuals who responded to the follow up questionnaire, 2 were still participating in activity 3 years on whilst the other 2 had ceased. The usefulness of the follow-up was fairly limited given the small numbers. However although fairly limited it did yield some information that could be added to the overall evaluation and inform future planning. It should be noted somewhere that after the initial pilot the exercise class component of the pilot programme was continued, although stopped shortly after due to poor attendance rates. Despite this the information gathered in the follow-up would suggest that those who had attended appear to believe it has value; all 4 of the follow-up participants stated that they thought more initiatives like the 'adopt a lifestyle' pilot would help those with a physical impairment to become more active.

Conclusion

Overall the multiagency group achieved its main outcome and devised a programme that had the potential to increase opportunities for those with a physical impairment. At the end of the pilot the evaluation highlighted a number of positive outcomes namely:

- The pilot seemed to provide individuals with the opportunity to forge social networks, and derive social benefits.
- A number of people who had previously been doing no physical activity were as a result of the pilot participating regularly once a week. And for at least two people this may possibly have been sustained for 3 years since.
- The majority of participants questioned felt more confident and perceived their fitness levels to be higher and their anxiety levels lower as a result of participation.
- The educational talks were relatively well received in terms of enjoyment.

However there were a number of areas of concern and it was felt that these needed to be addressed before a wider rollout could be considered:

- Very low uptake rate
- High drop out rate

- High number of coaches failing training
- Lack of suitable equipment for gym inductions
- Frequency of sessions being insufficient to meet the current recommendations for health benefits (as outlined for non disabled individuals)
- Lack of flexibility in the timing of the sessions
- Facilities within the center
- Other barriers previously mentioned e.g. cost, transport

At the end of the evaluation recommendations were made to the multi-agency group as to how these could begin to be addressed. Although the validity of the findings could be called in to question given the small sample size it is worth noting that this pilot was targeting a relatively small proportion of the Glasgow population and thus numbers will always be relatively small. Additionally, as highlighted, this research was being carried out in a 'real life' setting and thus some of the techniques that could be used in more 'research focused environments' to recruit and retain participants could not be applied.

Whilst the choice became more limited than originally planned, those who attended regularly received what was on offer well and reported a number of social benefits as a result of participation. It was therefore felt that if the concerns were properly addressed, the 'adopt a lifestyle ' pilot could provide a reasonable framework by which physical activity provision could be increased for those with a physical impairment living in Glasgow.

Chapter 4

Critique of the current provision and equipment within Glasgow City Council facilities for people with a physical impairment

Introduction

The Disability Discrimination Act (DDA) is legislation, which aims to end much of the discrimination faced by disabled people. The act seeks to give disabled people rights in terms of employment, access to goods and services and buying or renting land property. **Retrieved June 20, 2004, from http://www.disability.gov.uk/dda/**

In relation to goods and services this means that there is a legal obligation on organisations/service providers to make adjustments to the services they provide. In 1996 it became unlawful to treat a disabled person less favourably because they are disabled, and since 1999 service providers including those within the leisure industry have been legally required to change the way they provide their services in order to enable disabled customers to use them. In October 2004 the final stage of the act came into being and service providers must now plan permanent physical adjustments to their premises to ensure better access. Whilst these alterations should go some way to reducing the barriers for disabled people, their impact in terms of increasing levels of physical activity among disabled people may be limited unless there are appropriate programmes/opportunities on offer and equipment which can be utilised once inside. As previously outlined those studies that have looked at disabled people and physical activity commonly cite lack of opportunities and appropriate equipment as two of the key barriers to participation (Levins et al., 2004; Rimmer et al., 2004).

In terms of opportunities, Glasgow City council currently has 24 facilities that are used for sport and recreation. These centres offer an array of facilities and activities including fitness classes, health suites, football pitches badminton courts and swimming pools. Of the 24 facilities, 17 are part of the Glasgow Club, which is Glasgow's largest Health and Fitness club. For a monthly fee, each individual member is entitled to participate in a wide

range of activities, including unlimited use of the health suite, swimming pools, fitness suite (including personal training sessions) and fitness classes at all 17 centres across the city. The 17 centres that are part of the Glasgow Club are as follows:

1 – Bellahouston
2 – Castlemilk Pool
3 – Castlemilk Sport Centre
4 – Donald Dewar Leisure Centre
5 – Drumchapel Swimming Pool
6 – Easterhouse Pool
7 – Easterhouse Sports Cente
8 – Gorbals Leisure Centre
9 – Holyrood Sports Centre
10 – Kelvin Hall International Sports Arena (ISA)
11 – North Woodside Leisure Centre
12 – Pollok Leisure Centre
13 – Scotstoun Leisure Centre
14 – Springburn Leisure Centre
15 – Tollcross Leisure Centre
16 – Whitehill Pool
17 – Yoker Sports Centre

However the reason the 'adopt a lifestyle' pilot outlined in chapter 3 was established was because those working in the fields of disability, leisure and health identified that there were few specific opportunities for individuals with a physical impairment to participate in physical activity. The pilot was run in one of the 17 centres within Glasgow City and was designed to provide a specific opportunity for those with physical impairment to participate in physical activity. During the evaluation some individuals indicated that they would have preferred if the programme had offered more flexibility in terms of the frequency of provision and the location. They had felt that the programme should be run in a variety of locations at a variety of times to maximize its potential.

Although the pilot was reasonably successful, one of the key issues arising from the evaluation was that although the pilot programme gave individuals the option of taking part in gym inductions the vast majority of individuals were unable to do so. This was because the equipment within the gym was either unsuitable, for example no removable seat to allow wheelchair access, or it was positioned somewhere inaccessible, for example up a narrow staircase, with no lift access.

In England, the issue of lack of suitable equipment is being tackled by the Inclusive Fitness Initiative (IFI). The IFI is a Sport England funded initiative that works with 'not for profit'

fitness facilities to help them become more accessible to disabled and non disabled people. **Retrieved October 10, 2004 from http://www.inclusivefitness.org** The IFI claim to be the only standard worldwide in the fitness industry that ensures inclusion and have worked closely with fitness equipment suppliers, supporting them to produce equipment, which meets both the needs of disabled and non-disabled people. Disabled people test the equipment and accreditation is based upon their feedback combined with that of a panel of experts. For equipment to gain IFI accreditation, it must comply with their current interim set of fitness equipment standards (Appendix 18) which are valid until March 2006. The initiative was initially piloted in 29 facilities, and following the success of this pilot, the initiative has received a further £5million pounds in lottery funding to support a further 150 facilities across England in ensuring all 505 local authorities have an inclusive facility. Within England the majority of local authorities purchase IFI accredited equipment when they refurbish their gyms and many private gyms are also following suit (See footnote).[2]

The purpose of this study was therefore to do two things:

- 3 years on from the Adopt a Lifestyle pilot to investigate the current provision for participation in physical activity within Glasgow City Council for individuals with a physical impairment and to make some suggestions as to how this could be improved to increase opportunities if required.
- Audit the equipment currently provided within Glasgow City Council facilities in relation to inclusive fitness standards to establish if recommendations could be made which might provide more scope for those with physical impairments and the wider disabled community to participate in physical activity within Glasgow.

Methodology

Glasgow City Council Leisure facilities can be accessed by disabled people and thus individuals with a physical impairment will be able to participate in some of the activities/classes/opportunities/clubs run within these facilities. However in terms of classes and gym inductions, the ideal of being completely inclusive is not yet a reality.

[2] A web search was carried out to establish the existence of any organisations that provided accessible physical activity equipment for disabled people or guidance on standards for facilities equipment. The search led to an organisation known as the Inclusive Fitness Initiative (www.inclusivefitness.org). The information regarding the organisation was taken from the IFI website and from information sent to me by email from the organisation's regional co-ordinator after a request for further details on their work.

Many of the classes currently provided as part of the programme run within Glasgow Club facilities are 'Body System' classes. These follow a set routine and therefore there is little scope to offer alternatives or adaptations for those with a physical impairment. Therefore when investigating what opportunities were currently available to individuals with a physical impairment in Glasgow City Council, it was decided to investigate only those programmes that were specifically designed to accommodate individuals with this type of impairment. The data was examined purely in terms of provision for adults as the 'Adopt a Lifestyle' pilot evaluation also had an adult focus. Similarly because the 'Adopt a Lifestyle' pilot was about increasing health and fitness opportunities within mainstream facilities rather than increasing access to structured sporting activities, it was the current provision of health and fitness programmes that were examined.

Across Glasgow City Council, the G.C.V.S (Glasgow City Voluntary Sector) Sports Team in conjunction with Glasgow City Council Culture and Leisure Services deliver a citywide sports equality programme. The team is responsible for all the physical activity opportunities provided to disabled people including those with physical impairments. The team currently consists of 4 contracted coaches, 2 of whom work 28 hours a week, the remaining 2 work 25 hours a week. In addition there are 10 sessional coaches who contribute 1 or two hours a week to the programme. In order to establish the current provision for individuals with physical impairments, the team was contacted to provide a copy of their current timetable.

Some of the key recommendations arising from the 'Adopt a Lifestyle' pilot related to the frequency and location of the sessions. The Adopt a Lifestyle pilot was run once a week in one location in the city, at one time. It was suggested that to improve access to physical activity opportunities there should be more sessions run at different times of the week, in a variety of locations. Therefore when analysing the sports equality programme the information was analysed in terms of the following:

- The variety of activities on offer
- The frequency of the activities provided
- The location of the provision
- The timings of the provision.

By mapping the provision it was anticipated that it might be possible to identify any gaps in the current provision. Glasgow City Council's website, 'Active Glasgow' (www.activeglasgow.com), is the umbrella initiative for all sports and physical activities organised by Glasgow City Council and was used to establish background information on the location of the Council's Leisure facilities and what they had on offer. Additionally Glasgow City Council's Culture and Leisure services department had recently published their best value review of youth services and this was searched for background information into the council's leisure services.

Whilst class based programmes allow far more opportunity for social interaction, one of the key advantages of offering gym inductions is that gym based programmes do not depend on the suitability of the location, timing or frequency of classes. Potentially as long as the right facilities exist, gym programmes can be carried out at any time and as often as one would like. However, the gym within the facility used for the 'adopt a lifestyle' pilot was, for some, identified as being problematic as the equipment was either inappropriate or, because of the physical layout of the gym, was inaccessible. If this were to be replicated across the city, then the opportunities available for individuals with physical impairments to exercise independently are more limited and there would be a greater reliance on services to provide structured programmes through which people could increase their participation.

'The fundamental requirement for the IFI is an identified range of equipment that provides a total body workout for disabled people. **Retrieved October 10, 2004 from http://www.inclusivefitness.org**

At present the IFI have accredited 91 pieces of equipment from 15 different suppliers (appendix 19), listed on their website. The equipment accredited by the IFI is inclusive to allow use by disabled and non-disabled people in the same environment; it doesn't cost any more than other equipment on the market and is provided by many mainstream manufacturers. Therefore there is little reason why facilities could not feasibly purchase this equipment to ensure equity in the provision of equipment for disabled and non-disabled people.

The IFI appear to be the 'standard' in terms of disability inclusiveness within the fitness industry and therefore it was decided that it would be useful to compare what was currently available in Glasgow City Council facilities with the list of IFI accredited equipment. Facilities funded by the IFI must have at least 6 pieces of IFI accredited equipment, which should include a treadmill, bike, upper body ergometer, leg extension, leg curl and upper body multistation. These 6 items of equipment were therefore chosen as the items within Glasgow City Council facilities that should be examined with regards to the IFI list.

Information on accredited equipment and inclusive equipment criteria were obtained from the IFI website (www.inclusivefintessinitaitve.org). Information about the organisation was also obtained through email correspondence with the regional co-ordinator.

In order to gain information about the equipment within Glasgow City Council gyms, each facility was contacted by telephone. Those answering the phone at reception were asked what range of cardiovascular (CV) and resistance machines were stocked within the facility. The manufacturers were compared to those on the IFI accredited list. If the relevant manufacturer was found on the list for either the CV or resistance machines then the facility was contacted again and gym staff asked if they could indicate the relevant model. This information was then compared to the list to see if the specific item was listed.

In addition, all facilities were contacted to establish whether the facility had a pool hoist or chair. This equipment enables those with a physical impairment to access the pool more easily, thus potentially increasing physical activity opportunities.

Results

After examining the information provided by the G.C.V.S sports team, the following data was extracted in relation to individuals with a physical impairment. Within the Glasgow City Council sports equality programme there are 120 weekly physical activity opportunities. These opportunities are available to a variety of individuals including those with learning difficulties and those from minority ethnic backgrounds. Of the 120 opportunities, 16 are available to adults with a physical impairment. All 16 are delivered in conjunction with either older adults or individuals with learning difficulties. No specific sessions are run purely for individuals with a physical impairment.

Types and frequency of activities

Each programme was examined firstly in terms of the range of activities available to individuals with a physical impairment and the frequency of their provision. Table 4.1 outlines how the 16 sessions were comprised:

Table 4.1: Outline of the 16 sessions provided as part of the sports equalities programme

Type of activity	Number of opportunities in a week (Frequency)
Swimming	6
Gym based programme	4
Circuits/Aerobics	3
Multisport	1
Line Dancing	1
Tennis	1

Within the programme 6 different activities were on offer, which would seem to give people quite a reasonable level of choice. However there are discrepancies in how frequently these opportunities are provided. Swimming is by far the most frequently provided activity, with 6 sessions per week whereas the multisports, line dancing and tennis sessions are only provided once a week. This therefore does not allow much scope for participation in the full range of activities particularly if the location and timing of the opportunities do not suit.

Location of the activities

Glasgow City covers a geographic area of approximately 68 square miles (17,730 hectares) with a population of over 60, 000 people. In terms of culture and leisure services the city is split into 8 geographical areas, which are listed in table 4.2:

Table 4.2 Geography of Glasgow City Council area teams

Area Team	Geographical areas covered
1 **Drumchapel and West**	Partick, Drumchapel, Summerhill, Drumry, Knightswood, Yoker, Anniesland, Jordanhill, Scotstoun and Whiteinch
2 **North West**	Kelvindale, Hyndland, Hillhead, Kelvin, Anderston, Woodlands, Summerston, Maryhill and Queens Cross
3 **Govan, Penilee and Gorbals**	Govan, Gorbals, Penilee, Cardonald, Pollockshields, Hutchesontown
4 **Greater Pollok and South Side**	Pollock. Mosspark, Crookston, Nitshill, Darnley, Carnwadric, Strathbungo, Langside Pollokshaws ,
5 **North**	Milton, Possilpark, Merchant City Royston, Springburn, Dennistoun, Robroyston
6 **Greater Easterhouse and North East**	Carntyre, Queenslie, Greenfield, Barlanark, Gartjamlock, Ruhazie, Cranhill Easterhouse
7 **East End**	Bridgeton, Calton, Dalmarnock, Parkhead, Shettleston, Tollcross, Mount Vernon, Garrowhill Ballieston
8 **South East and Castlemilk**	Castlemilk, Govanhill, Cathcart, Mount Florida, Toryglen, Kingspark, Carmunnock Battlefield

The distribution of the Glasgow Club facilities in relation to these geographic areas are outlined in table 4.3.

Table 4.3 Location of Glasgow City Council facilities by area team

Area	Facility in that area
1	Donald Dewar Leisure Centre, Drumchapel Swimming Pool, Scotstoun Leisure Centre, Yoker Sports Centre
2	North Woodside Leisure Centre, Kelvinhall International Sports Arena
3	Gorbals Leisure Centre, Bellahouston Leisure Centre
4	Pollok Leisure Centre
5	Springburn Leisure Centre, Whitehill Pool
6	Easterhouse Sports Centre, Easterhouse Swimming Pool
7	Tollcross Leisure Centre
8	Castlemilk Pool, Castlemilk Sports Centre, Holyrood Sports Centre

Each area has at least one of the Glasgow Club facility located within it. This means that potentially there is the opportunity for access to a leisure facility for participation in some form of physical activity and for the sports equalities programme to offer specific opportunities to individuals with physical impairments across the city.

However when the programme was examined in terms of the geographic spread, of the 16 opportunities currently available to those with a physical impairment, 50% of all opportunities take place in area 1 (n=8), with all 8 being delivered at Scotstoun Leisure Centre. In terms of provision this equates to all of the swimming opportunities and 2 of the 4 gym sessions.

In area 2, three sessions are provided: one circuit/aerobics class, the weekly multisport session and the weekly line dancing session. Two facilities are used for the delivery of these 3 sessions. The multisport session is delivered in the Kelvinhall ISA whilst the other two sessions take place in a recreation centre in Wynford, near Maryhill. The latter of these facilities is not part of the Glasgow Club.

The fourth of the 4 weekly gym sessions occurs in area 5 at Springburn Leisure Centre with Tollcross Leisure Centre in area 7 hosting the second of the weekly circuit/aerobics classes. There are no sessions currently provided to adults with a physical impairment in

areas 4, 6 and 8. This means that currently anyone from these areas wishing to access one of the sports equality programme opportunities would need to travel to another area.

Whilst there is a reasonable geographic coverage across the city, the density of activities offered in certain areas means that the provision becomes more limited than it would at first seem. As all the swimming sessions are delivered in area 1 anyone wishing to access these sessions would need to travel to Scotstoun Leisure Centre. For someone from Shettleston who relies on public transport and wishes to access the swimming programme the distance may be a barrier to participation. The number 62 bus goes from Shettleston to Scotstoun but it takes approximately 52 minutes either way which could prove too time consuming, particularly if the bus timetable does not fit with the session times. Alternatively a taxi may prove too expensive. The results are outlined in table 4.4

Table 4.4 The leisure opportunities available in each geographic area

Area	Activities on offer
1	Swimming x 6, Gym session x 2,
2	Circuit/ Aerobics, Multi Sport, Line Dancing
3	Gym session, Circuit/aerobics Tennis
4	
5	Gym session
6	
7	Circuit/Aerobics
8	

Days of the week and timings of the sessions

In addition to the frequency and location of these activity opportunities, it was felt that it was also important to examine the spread of activities available throughout the week and the timings of these opportunities as these too may impact on an individual's ability to access the opportunities provided. Table 4.5 outlines the days of the week the opportunities are available.

Table 4.5 Available opportunities by days of the week

Day of the week	Opportunities Available
Monday	Circuit/Aerobics, Gym
Tuesday	Swimming x3, Circuits/aerobics x 2, Gym
Wednesday	Tennis
Thursday	Swimming x3, Multisport, Line Dancing,
Friday	Gym x2
Saturday	
Sunday	

Looking at the information in isolation there appear to be a number of opportunities available to individuals with physical impairments throughout the week, although this could be improved by having opportunities available at the weekend. However, when the information is viewed in conjunction with all the information previously outlined, it becomes apparent that people's choices could be quite limited depending on where they live, what access they have to transport, and the type of activities they want to participate in. Table 4.6 outlines the timings of the available sessions.

Table 4.6 Timings of the weekly opportunities

Start time between	Number of sessions
9am and 10am	0
10am and 11am	**6**
11am and 12 noon	**4**
12 noon and 1pm	0
1pm and 2pm	**6**

The majority of the sessions (n=10) are run before lunchtime, with the remaining 6 sessions taking place in the slot directly after lunch, starting sometime between 1pm and 2pm. The timing of the sessions may be based on user feedback and thus these could be the time slots that most suited the majority of individuals, certainly the 1pm slot had been popular amongst those attending the 'Adopt a Lifestyle pilot. However having sessions in the early evening would give those who may be working or who rely on others for

transport, greater flexibility and choice, particularly as there is currently no weekend coverage.

Table 4.7 Sports equality programme for adults with a physical impairment

Day	Venue (area)	Activity	Time
Monday	Tollcross (7)	Circuit/Aerobics	11.00-12.00noon
	Gorbals (3)	Gym	1.30-2.30pm
Tuesday	Scotstoun (1)	Swimming	10.00-10.40am
			10.40-11.20am
			11.20-12.00noon
	Wynford (2)	Circuit/aerobics	10.30-11.30am
	Springburn (5)	Gym	1.00-2.00pm
	Gorbals (3)	Circuit/aerobics	1.30-2.30pm
Wednesday	Gorbals (3)	Tennis	11.00-12.00
Thursday	Scotstoun (1)	Swimming	10.00-10.40am
			10.40-11.20am
			11.20-12.00noon
	Wynford (2)	Line dancing	10.30-11.30am
	Kelvinhall (2)	Multisport	1.30-2.30pm
Friday	Scotstoun (1)	Gym	1.00-1.40
			1.40-2.30

As a whole the sports equality programme does offer some specific opportunities for those with a physical impairment to participate in physical activity and goes some way to increasing opportunities for individuals to participate. However at present there are still a number of restrictions on what people can access, as the choice of activity is limited by the location, timing and frequency of the sessions. More comprehensive coverage is needed in order to widen access for those with physical impairments and ensure equity of opportunity within Glasgow City Council.

Gym Facilities

Of the 17 facilities, which together comprise the Glasgow Club, 14 have gym/fitness facilities. One facility was undergoing refurbishment therefore information could not be gathered about the equipment available within this facility. The remaining 13 Glasgow Club facilities were contacted about the equipment available within their gyms. To give disabled people a full body workout, the IFI recommend that there be a IFI accredited treadmill, bike, upperbody ergometer, upper body multistation, leg curl and leg extension machine. Therefore information was gathered for each of these pieces of equipment and compared to that on the IFI accredited equipment list.

The IFI were asked if they could indicate whether certain pieces of equipment had 'failed' to gain IFI accreditation to see if any of the pieces within Glasgow City Council facilities had failed to gain inclusive accreditation. When asked, the IFI explained that they could not indicate what products 'failed' to gain accreditation, as the process of gaining accreditation was often ongoing. Many manufacturers would after a 'failed' submission be given guidance on how to adapt their products to meet the IFI criteria and thus many products were currently being adapted so that they could then be resubmitted.

Other than failing to be accredited, another reason certain pieces of equipment may not be on the IFI website is that manufacturers may simply not have put forward particular pieces for accreditation. It was therefore decided that the particular brands of equipment within the Glasgow City Council facilities not found on the IFI list would not be outlined. Additionally it was felt that concluding statements could not be made as to the inclusiveness of Glasgow City Council Facilities. Rather it was decided that what could be talked to was whether the pieces of equipment within the Glasgow City Council Glasgow Club facilities were on the IFI list and thus, based on the current IFI criteria whether the IFI would consider them an inclusive facility.

The results are tabled in 4.8

Table 4.8 Presence of IFI equipment in each Glasgow Club facility

Name of Facility Y=Yes N= No	Treadmill Y/N	Bike or recumbent Y/N	Upperbody ergometer Y/N	Upperbody multistation Y/N	Leg curl Y/N	Leg exten
Bellahouston	N	N	N	N	N	N
Castlemillk	N	N	N	N	N	N
Donald Dewar	N	N	N	N	N	N
Easterhouse	N	N	N	N	N	N
Gorbals	N	N	N	N	N	N
Holyrood	N	N	N	N	N	N
Kelvinhall (ISA)	N	N	N	N	N	N
North Woodside	N	N	N	N	N	N
Pollok	N	N	N	N	N	N
Scotstoun	N	N	N	N	N	N
Springburn Leisure Centre	N	N	N	N	N	N
Tollcross	Y	Y (Upright & Recumbent)	N	N	N	N
Whitehill Pool	N	N	N	N	N	
Yoker	N	N	N	N	N	

Treadmills

The IFI currently have 9 accredited treadmills made by 5 different manufacturers recognised as being inclusive pieces of equipment. At present only 1 Glasgow City Council facility stocks an IFI accredited treadmill.

Cycles

There are 9 recumbent cycles and a further 10 upright cycles that have been identified by the IFI as suitable for use by both disabled and non disabled people. Of the Glasgow City Council facilities examined, only 1 had IFI accredited cycles, both accredited upright and recumbent cycles.

Upper Body ergometer

The IFI recommend that facilities have an upperbody ergometer. There are 3 upperbody ergometers on the market that have IFI accreditation and a further 11 with lower body options. These ergometers are wheelchair accessible and thus ensure that individuals who use their wheelchair for mobility can derive a cardiovascular workout. They are however are also suitable for non-disabled individuals. Not one of the Glasgow facilities currently has an upper body ergometer as part of their equipment range. The lack of this piece of equipment could be limiting the opportunities for some individuals to derive a cardiovascular workout and the potential health benefits that this type of workout could bring.

Leg Curl & Leg Extension

There are 6 leg curl and 6 leg extension pieces of equipment accredited by the IFI. None of the gyms currently stock a range that has thus far been given IFI accreditation.

Upper Body Multistation

34 upper body multistations have gained IFI accreditation. Not one facility reported having an IFI accredited upperbody multistation.

Pool Hoists and Chairs

In addition, each of the 17 facilities within the Glasgow Club were asked if they had a pool hoist or chair. The results are tabled below in table 5.9.

Table 4.9 Presence of Pool Hoist or Pool Chair in each Glasgow club facility

Name of Facility	Pool Hoist/Chair
Bellahouston Sports Centre	Yes
Castlemilk Pool	Yes
Castlemillk Sports Centre	No Pool
Drumchapel Swimming Pool	Yes
Donald Dewar Leisure Centre	No Pool
Easterhouse Pool	Undergoing refurbishment
Easterhouse Sports Centre	No Pool
Gorbals Leisure Centre	Yes
Holyrood Sports Centre	Not currently
Kelvinhall International Sports Arena	No Pool
North Woodside Leisure Centre	No
Pollok Leisure Centre	Pool Chairs- beach entry
Scotstoun Leisure Centre	Yes
Springburn Leisure Centre	Pool Chair
Tollcross Leisure Centre	Yes
Whitehill Pool	Yes
Yoker Sports Centre	No Pool

Of the 17 facilities, 12 had a pool within it. One of these 12 facilities was currently undergoing refurbishment and therefore it was not possible to establish whether it had a hoist or chair or if it were going to have one. Of the remaining 11 facilities with a pool 9 had either a hoist or chair by which those with a physical impairment could access the pool. 2 facilities did not have a pool hoist or chair. One of these facilities indicated that they currently shared the pool with the local school and that they were investigating the possibility of acquiring a hoist.

Discussion

Lack of opportunity and lack of suitable equipment are often highlighted as a barrier to physical activity participation amongst disabled people(Levins et al., 2004; Rimmer et al., 2004). In Glasgow The 'Adopt a Lifestyle' pilot highlighted in chapter 3, evolved because it was recognized that there were relatively few opportunities available for those with a physical impairment to participate in physical activity. The 'Adopt a Lifestyle' pilot was relatively successful and did provide opportunities for those with a physical impairment to engage in physical activity, however it was felt that were it to be rolled out there would need to be greater flexibility in terms of location and frequency. Three years on the Sports Equalities Programme has certainly increased the provision for this group of individuals and covers a wider geographic area, however the opportunities available are still quite limited.

As part of the Sports Equality Programme there are 16 weekly opportunities for those with a physical impairment to participate in physical activity. However, because there are a number of different activities on offer, the frequency with which these can be provided is quite limited. Additionally the frequency of provision varies considerably between activities, meaning the degree of choice is not consistent across the provision. Furthermore, the provision is unequally spread across the city with certain activities only being offered in certain areas, thereby the accessibility of this programme is decreased depending on where people reside and their access to transport.

A programme covering every area, with multiple opportunities provided on a number of occasions, at a variety of times would certainly increase provision. However, the capacity to deliver a more extensive programme may currently be limited by the number of staff available to deliver sessions specifically for people with physical impairments. The sports equality team currently delivers 120 sessions a week and consists of 4 contracted coaches, 2 of whom work 28 hours a week and 2 who work 24, although there are some sessional coaches who work a couple of sessions a week.

Training people to teach/instruct disabled people in exercise/physical activity would therefore seem one of the key ways to increase provision. However, whilst hiring and

training more staff to deliver an increased number of sessions as part of the sports equalities programme is one way the number of opportunities could be increased, there are some points that should be considered:

- Is there the demand for an increased number of classes for individuals with a physical impairment or indeed any impairment?
- Are the classes full enough to be economically viable?

If the numbers are relatively low then there should be assessment of whether putting on more opportunities specifically for those with physical impairments is the most appropriate approach.

An alternative option would be to train existing staff working in leisure facilities, who teach/instruct within the mainstream programme. If these instructors were trained in teaching exercise to disabled people, then rather than trying to expand the provision within the sports equalities programme, mainstream classes could be adapted if and when required to accommodate all disabled people, thus increasing opportunities within the existing provision.

Disabled people, or those with a physical impairment, are not currently excluded from mainstream provision, however this training would increase staff confidence in adapting their classes and thus the mainstream sessions could be promoted more proactively to disabled people. In the future it should be mandatory that in addition to basic gym and aerobics qualifications, all staff teaching/instructing within Glasgow City Council facilities be required to undergo an additional qualification around disability and exercise.

If the latter of these options were to be taken forward then leisure centres might need to consider the types of classes being provided. Many of the Glasgow City Council facilities offer Body System classes such as ' Body in Balance' 'Body Step' 'Body Pump'. These classes have set routines and, whilst when contacted, the Body Training Systems company indicated that some classes may be able to be adapted, these types of classes are perhaps less easy to adapt than some others which are less rigidly structured. Facilities might therefore want to consider devising class timetables that strike a balance between commercial style classes and those devised by the individual instructor.

Gym inductions and gym programmes would be another way of increasing programmes These allow far more freedom for individuals, in terms of time, frequency and reliance on a particular session being available. They also however require suitable equipment.

During the 'Adopt a Lifestyle' pilot evaluation highlighted in chapter 3, one of the key issues arising was the lack of suitable equipment within the pilot gym. During this study, the equipment available across all of the Glasgow Club facilities was examined. The IFI inclusiveness standards were used as reference and whilst it could not be said that the equipment was unusable by all people with a physical impairment or other disabled people, it could be stated that Glasgow City Council facilities had very limited IFI accredited equipment.

Not one facility had an upperbody ergometer, meaning that not one facility had the three key identified pieces of cardiovascular equipment recommended by the IFI. One out of the 15 facilities had both an IFI accredited treadmill and bike. None of the facilities had an accredited piece of muscle conditioning equipment, which could potentially enable individuals to increase their strength.

One facility did have cardiovascular equipment designed specially for disabled people and this is noteworthy. There may be facilities that have purchased pieces of equipment for specific use by disabled people, and thus may be able to accommodate people with particular impairments more readily than other facilities. The advantage with the IFI equipment is that it has been considered for each impairment group, for example learning difficulties, visually impaired, and for non-disabled users, and therefore is completely inclusive. Specialised pieces of equipment may only be suitable for certain impairments and thus it could be quite a drain on resources and space to keep purchasing different pieces to accommodate a range of individuals. Additionally, buying individual pieces for people with a particular impairment may also mean that there are only a limited number of pieces available to that person.

Whilst it is perhaps cost effective to go with particular brands of equipment, those purchasing equipment need to consider the guidance given by organisations like the IFI in order to ensure that money is not being spent on equipment that then makes the gym less

inclusive. Using the IFI guidlines, gyms would have a range of pieces that could be used to give all individuals, whether they have an impairment or not, a full body workout and would be much more in line with the DDA.

A complete refit of all facilities would be extremely costly to complete simultaneously, however when equipment is being renewed, those refitting facilities should look to invest in equipment accredited by the IFI. Any new- built facility should also be encouraged to invest in IFI accredited equipment as a means of increasing access to physical activity opportunities for disabled people. Buying inclusive equipment, in conjunction with enhanced staff training for those inducting disabled people on equipment use, should increase the potential opportunities for participation among disabled people .

Conclusion

The Disability Discrimination Act addresses inequalities faced by disabled people in relation to access to goods and services. This means that with regard to physical activity disabled people should be enabled to have equitable opportunities to participate in relation to non-disabled individuals. Previous research has shown that two of the key barriers to participation for disabled people are often lack of suitable equipment and lack of available opportunities both of which are relatively easy to address.

The purpose of this study was to look at specific physical activity opportunities available to those with physical impairments within Glasgow City and the equipment available within the Glasgow City Council Glasgow Club facilities to see if recommendations could be made as to how physical activity opportunities could be increased for these individuals. Based on the findings the following are recommended:

1) Feasibility and cost effectiveness of increasing the number of specific opportunities for those with physical impairments needs to be examined and weighed against increasing provision through mainstream programmes.

2) All staff working in gyms and teaching classes should be put through a formal exercise and disability qualification upon appointment or be required to have it alongside any other required qualification when applying for posts.

3) Mainstream exercise class programmes need to be examined with regards to the commercially produced content of the classes. These classes may be less able to incorporate those with disabilities and therefore need to be evenly weighted with classes where teachers have more freedom to adapt their teaching. Alternatively consultation needs to be carried out with commercial class providers such as Body Training Systems on ways to adapt the classes on offer.

4) Gyms should look to carry the minimum 6 pieces of IFI equipment required to ensure disabled people have access to a full body workout. A staged approach could be taken to minimize expenditure however a deadline should be set for having this in place and all new build facilities should purchase such equipment as standard. Contact should be made with the IFI to keep up to date with any changes to their recommendations.

Chapter 5

Survey of individuals with physical impairments and parent/carers

Introduction

Two thirds of the European population is still not undertaking sufficient physical activity to meet the current recommendations for health (Blamey & Mutrie, 2004). In order to impact on the health of individuals and the nation as a whole, this pattern of sedentary behaviour needs to be addressed. The challenge for exercise specialists is establishing how best to do this effectively.

Part of the difficulty in establishing how best to increase physical activity levels according to Blamey and Mutire (2004) is that although there is evidence which highlights the effectiveness of some physical activity interventions there are still gaps in the evidence base which make it hard for practitoners and policy makers to know which interventions to use when and where. Blamey and Mutrie state that more information is required in order to understand how best to influence behaviour and recommend that new and more integrated approaches to evaluation and practice are adopted.

As various research papers have outlined, the knowledge base for disabled people is considerably less well established than that for the general population and so it can be assumed that exercise professionals and policy makers are even less well informed about developing strategies and interventions which might effectively increase the participation for specific populations such as those with physical impairments. Before interventions can be designed or tested for disabled people much more information is required to gain an understanding of the issues they face.

In 2001 sportscotland commissioned research from Scot Porter Research and Marketing Ltd as a means of providing sportscotland and others with some direction for increasing access to sport among disabled people living in Scotland (Scot Porter Research and Marketing Ltd, 2001). What this research aimed to do was gain an understanding of the

barriers faced by disabled people with regards to participation in sport and come up with an actionable strategy to tackle these.

The research established that there were three key attitudinal or behavioural types based on the individuals' level of self confidence and their underlying attitude to their impairment (Scot Porter Research and Marketing Ltd, 2001). They found that in relation to physical activity participation it was these underlying factors that determined the attitudes, behaviour and barriers faced rather than the nature of the impairment itself. Through their research they found that individuals faced slightly different barriers to physical activity, depending on the stage of behaviour change these individuals were at and also the individuals' attitudinal type for example precontemplators faced different barriers to preparers.

In addition to providing a framework for the way forward, another key objective of the study was to provide guidance on future research needs. The recommendations included the need to examine:

- Perceived value of participation in sport
- Reasons for non participation
- Levels of awareness of what is available and perceived appropriateness of this
- Levels of participation broken down by variables such as age; gender; social class; urban V's rural; and type and severity of disability.
- Types of sport the target group are taking part in
- Where they are taking part.

Guidance was also provided on the most appropriate methodologies and also the composition of the desired sample.

Whilst the sportscotland research is extremely useful and could be used t, it is Scotland wide and therefore does not perhaps reflect issues experienced locally. Additionally it is centred on disabled people as a whole and does not extrapolate key issues for people with specific impairments. Blamey and Mutrie state that one of the limitations of current research is that whilst it highlights the effectiveness of intervention in certain groups and setting there is a lack of knowledge about the transferability of many of these

interventions. In which case although the sample within the sportscotland report may have included individuals from Glasgow it may not be appropriate to use the information gathered nationally to develop a localized strategy/intervention to increase physical activity amongst a specific disabled population.

The purpose of this study was therefore to adapt some of the recommendations for future research outlined by sportscotland and establish:

- What the beliefs are of those living in Glasgow with a physical impairment with regards to physical activity
- What the current level of the physical activity is being undertaken by those with physical impairments living in Glasgow
- What barriers they experienced locally with regards to physical activity participation
- What individuals with physical impairments think would help increase physical activity participation in Glasgow
- The views of parents/carers and the training needs of staff working in Glasgow City Council leisure facilities.

It was anticipated that this information could be used to develop recommendations that would provide those working in health, leisure and planning with a baseline from which future plans to increase participation amongst those with a physical impairment living in Greater Glasgow could be formed or from which future research could be developed.

Methodology

Ethical Approval

An application for ethical approval was submitted to the University of Glasgow ethics committee for non-clinical research involving human subjects. This study was given approval on the 21st of June 2004 (Appendix 3).

Participants

Three key groups of individuals were targeted to participate in this study. The three groups chosen were:

Individuals with a physical impairment

As the purpose of the study was to look at ways of increasing physical activity participation among those with physical impairments it was vital that the information gathered reflect their views, beliefs and behaviours.

Parents/carers of individuals with a physical impairment

In 2002 Heller et al showed that the likelihood of individuals with cerebral palsy participating in physical activity was influenced by their parent/carer's belief about the benefits of individuals taking part (Heller et al., 2002). Therefore it was felt important to examine the views of parents and carers to see what impact they may have on activity levels amongst those with a physical impairment and their views of current provision. Additionally within sportscotland's report they recommended that when carrying out future research around disability and sport, the views of parents and carers also be examined.

Individuals working within Glasgow City Council Leisure Facilities

The views of this group were included because barriers commonly cited by disabled people include:

- Attitudes of others (Scot Porter Research and Marketing Ltd, 2001)
- Perceived lack of knowledge among staff about how to cater to their needs (Froehlich, Nary, & White, 2002; Rimmer et al., 2004)

Therefore it was decided that it was important to ask staff working in leisure facilities about the training they had had in relation to disability, any self perceived training needs and their awareness about what physical activity opportunities and facilities were available to disabled people.

Research Tool

The guidance given by sportscotland on the methodology for future research clearly outlined that a qualitative approach would be the most appropriate. Within the report it states that this type of approach would 'provide the opportunity to target a wide audience in order to provide a robust measurement of attitudinal and behavioural patterns.' Several methods could have been chosen as a means of collecting the required data and indeed the

sportscotland report recommends using a mixed methodology including self-completion questionnaires and face-to-face interviews.

This study was being carried out on a part time basis and therefore the method of data collection chosen had to manageable in terms of time and capacity. Given that information for this study was being sought from three different groups within a relatively short timeframe, it was decided to use one methodology (a self-completion questionnaire). Self administered questionnaires are advantageous because they can be sent to large segments of the population with relative ease, and therefore have the potential to produce large data sets at little cost. The downside is however that questionnaires can often produce low return rates and the information provided can be affected by personal interpretation of the questions and respondent bias.

Questionnaire design

Three separate questionnaires (appendices 20, 21 and 22) were created for this study as the focus for each group differed slightly. Each questionnaire was designed to be completely anonymous. Although some demographic information was requested, there was no way of identifying individuals from their responses.

Where there were different sections, different coloured paper was used to distinguish between the two, and at the end of each section participants were thanked for their participation. Most questions were designed to be tick box questions to make completion easier.

People with a physical impairment

The sportscotland report outlined a number of key areas they were important for future research. The questionnaire for those with a physical impairment was not designed to answer all of these but did attempt to address some of them at a local level. The questionnaire was therefore designed to try and establish the following:

- Whether individuals with a physical impairment living in Glasgow were currently active or inactive.
- The types and frequencies of physical activity participation individuals with a physical impairment living in Glasgow were involved in.

- Whether individuals perceived there to be any value in participating in physical activity and what this value might be.
- Reasons for non-participation.
- Individuals' perception of the current provision.
- What individuals themselves think is required to enable people with a physical impairment to become more active.

Parents and Carers

Because the beliefs of significant others can sometimes influence health behaviours, parents and carers were asked specific questions outlining their own levels of participation, how highly they would rate physical activity in relation to improving health, and their beliefs about the benefits of participation for the individual they support.

Staff working within Glasgow City Council Leisure facilities

As staff knowledge has been identified as a potential barrier to disabled people (Levins et al., 2004), this questionnaire included questions about what type of training staff had had, when it took place, who had delivered it, whether it had been adequate and if they would like further training. It was anticipated that this would to give a clear picture of where there may be training gaps that could be addressed in order to tackle this perceived barrier. Additionally staff were asked about their knowledge of provision within the centre for disabled people. The questionnaire was targeted at reception, gym and pool staff, in order to get a range of views within the leisure industry. Those who were directly involved in physical activity delivery to those with a physical impairment were asked additional questions about the training they had had for this role and about any difficulties they had experienced.

Participants and Distribution

The sportscotland research report recommends that distribution should be through a range of channels including both disability organisations and more general channels such as schools. Because ethical approval was gained through the University of Glasgow ethics committee and not that which governs the NHS, no participants could be targeted through NHS organisations or facilities. Several web searches were therefore carried out on the

Internet to identify disability and carer organisations within Greater Glasgow and contact was initially made by telephone. Each organisation was given a brief overview of the study and asked if they would be interested in receiving and distributing the appropriate questionnaire. Those organisations agreeing to be involved were asked how many questionnaires they feasibly thought they could distribute in the time frame, which was approximately one month. Each organisation was then sent the following:

- A covering letter addressed to the manager or key contact reminding them of the initial contact; outlining the purpose of the study and giving contact details for any questions or queries they may have had.
- The questionnaire and information sheet to be distributed to participants (either people with a physical impairment or parents/carers)
- Stamped addressed envelopes for the return of completed questionnaires.

Several organisations felt the return rate would be better if they used their own self-addressed envelopes. Once a number of questionnaires had been returned they agreed that they would make contact and arrange for returned questionnaires to be collected. Because the focus of this study was adults with physical impairments the questionnaire was not sent to anyone under the age of 16.

In order to target those staff working within Glasgow City Council Leisure facilities, contact was initially made with the overall facilities manager. They were asked if they would be willing to support this research and allow the questionnaire to be distributed within each of the facilities. Glasgow City Council, and NHS Greater Glasgow's physical activity team within Health Promotion were in the process of investigating courses for leisure staff around disability and were therefore supportive of this work. The overall facilities manager offered to co-ordinate the distribution through the operational managers within each facility, who would be responsible for ensuring it was given to each staff member within the three key groups: gym, pool and reception staff. Unfortunately this agreement was not adhered to and despite every effort to liaise with this member of staff the questionnaires were not administered to Glasgow City Council leisure staff.

Data Storage

All the data collected during this study was stored anonymously either on a computer file or in a locked filling cabinet. The only person with access to the information was the researcher.

Data Analysis

The data collected was entered into SPSS version 11. Because the number of responses was relatively low, frequency calculations were used to present the data. Where possible chi-square tests were performed to determine if there were significant differences in the distribution of variables.

Results

The results are outlined firstly for individuals with physical impairments and then subsequently for parents/carers.

Individuals with a physical impairment- Return Rate

In total 123 questionnaires were distributed to interested organisations. Assuming that all 123 were administered, the return rate was 30% (n=36). 2 questionnaires were rejected as one individual stated they had difficulties with their mental health rather than a physical impairment and one questionnaire was incomplete. The return rate was therefore 28% (n=34) although this may be an underestimation as some organisations were unable to say how many of the batch they actually distributed. Although the return rate was reasonable for a postal questionnaire, the results generated should be viewed with caution as they reflect a relatively small number of individuals. The data for some questions was incomplete.

Respondents

31 respondents identified their gender, of which 17(58.8%) were male and 14(41.2%) were female. There was little difference in the age groups of those responding with 17.2% of respondents indicating that they were in the under 25 bracket, 20.7%, in the 25-34 age group and, 24.1%, 20.7% and 17.2% in the 35-44, 45-54 and over 55 brackets respectively.

Eleven people (35.5%) reported having a physical impairment other than those listed. However the range of impairments within the 'other' category varied considerably and thus the most commonly reported collective impairment was cerebral palsy (25.8%, n=8).

44.1% of respondents (n=15) were wheelchair users, the majority of whom used manual chairs (73.3%). In terms of employment status 62.5% (n=20) were unemployed with a further 6 (18.8%) in retirement. Only 6 individuals stated they were employed (18.8%).

Activity status

The majority (65.6%, n=21) of respondents categorised themselves as being inactive. Only 34.4% (n=11) said that they were active. To gauge how long individuals were engaged in sedentary activities they were asked how many hours a day they spent sitting or lying down excluding sleep. Of the 27 respondents the average time indicated was 7.6 hours, although the range was from 1-24 hours.

Activity status by gender

Of the 17 males who answered the questionnaire about activity status, 9 (52.9%) were inactive and 8 (47.1%) were active. With regards to female respondents, 9 of the 14 respondents (64.3%) were inactive, 2 (14.3%) were active and 2 (14.3%) chose not to answer the question. These findings would correspond with findings among the general population that women are generally less likely to be involved in physical activity than males although no significant difference was found in relation to gender and activity status (p=0.208) in this study. The results are tabled in 5.1.

Table 5.1 Activity status by gender

		What sex are you		Total
		Male	Female	
How would you describe yourself?	Inactive	9	9	18
	Active	8	3	11
	Total	17	12	29

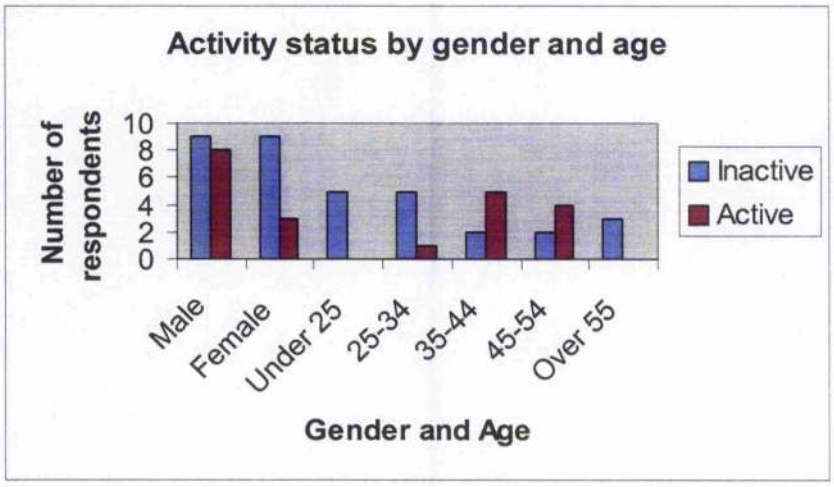
Activity status by age

The majority of those who identified themselves as being active were in the age brackets 35-44 (71.4%) and 45-54 (66.7%). Nobody in the under 25 age bracket or the over 55 age bracket identified themselves as being active with only one 25-34 year old stating that they were currently involved in activity. When a chi-square test was performed there were significant differences found in the age groups of those who were active and inactive (p=0.021). This was also the case when the data was collapsed to compare those under 35, those 35-54 and those 55 and over (p=0.004 but 66.7% of cells had an expected count of less than 5). However in order to state conclusively that there was a significant difference, 25% or less of the cells would need to have an expected count of less than 5 which was not the case in either of these tests. Therefore there was no significant difference between individual's activity status and their age. Table 5.2 highlights the number of active and inactive people in each age group. Figure 5.1 illustrates activity status by age and gender.

Table 5.2 Activity status by age

	What age group are you in					Total
	Under 25	25 - 34	35 - 44	45 - 54	Over 55	
How would you describe yourself? Inactive	5	5	2	2	3	17
Active	0	1	5	4	0	10
Total	5	6	7	6	3	27

Figure 5.1 Illustration of activity status by gender and age

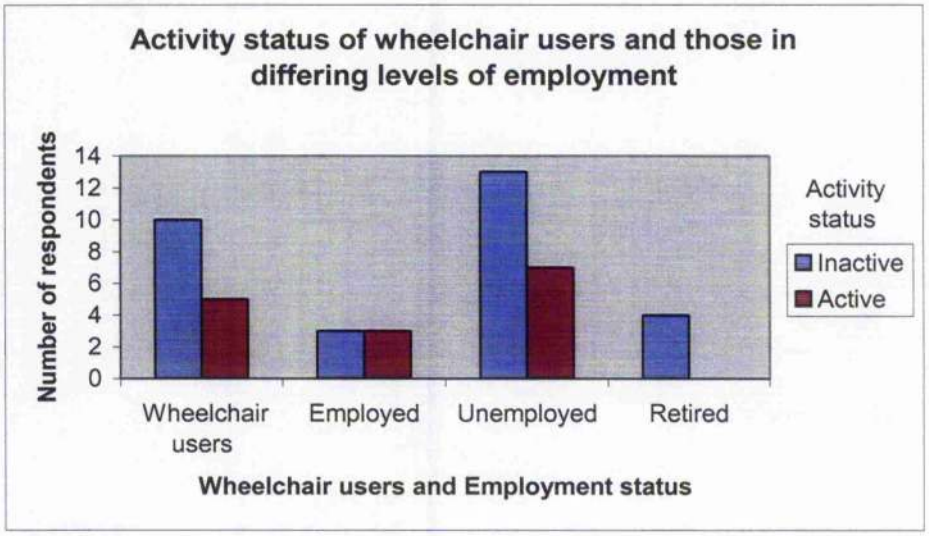


Activity status by wheelchair use and employment

A higher number of wheelchair users reported being inactive than active (10 (75%) v's 5 (25%) but this difference was not significant (p=0.545). The majority of those respondents using wheelchairs reported using manual chairs (73.3%).

In terms of employment there was no significant difference (p=0.250) between those who were active and inactive. Of those who were employed 2 people indicated that they did some physical activity as part of their journey to work, three said they did not and one person chose not to answer. Figure 5.2 illustrates the activity status of those using wheelchairs and their employment status.

Figure 5.2 Illustration of the activity status of respondents using a wheelchair and their employment status



Benefit of physical activity

Individuals were asked to indicate whether they thought they could benefit from participation in physical activity. The majority of respondents said that they thought they could benefit (78.8% n=26). The other 21.2% said they were not sure. No one indicated that they thought they would not benefit from participation, even though the majority of individuals indicated that they were currently inactive.

Those who were inactive seemed more likely to report that they were unsure if they could benefit from physical activity than in the active group (23.8% v's 10%). However people's beliefs about whether or not physical activity could benefit them did not differ significantly according to their activity status (p=0.350)

Perception of the benefits that could be derived from participation

The 78.8% (n=26) who indicated they thought they could benefit from participation, were asked to indicate what benefits they thought could be derived. One person chose not to answer this question. The results for the remaining 25 are shown in table 5.3:

Table 5.3: Perceived benefits that could be derived from physical activity participation

Perceived benefit from participation in physical activity	Percentage (%)	Frequency (n=)
Improve my fitness	84.6	22
Opportunity to meet new people	52.0	13
Feel good about myself	64.0	16
Improve my strength	68.0	17
Improve/maintain ability to carry out day to day tasks	64.0	16
Help to maintain or lose weight	76	19

Improved fitness and weight maintenance/loss were identified most often. Improved strength, ability to maintain daily activities and feel good about oneself were also highly rated, with differences in actual numbers corresponding to one or two people. When chi-square tests were carried out on the data no significant differences were found in relation to the perceived benefits amongst those who were active and those who were inactive. The results are shown in table 5.4

Table 5.4 Perceived benefits of participation in physical activity in relation to current activity status and statistical difference.

Perceived benefit from participation in physical activity	Active respondents (n=number)	Inactive respondents (n=number)	p-value
Improved fitness	7	15	0.249
Opportunity to meet new people	3	11	0.089
Feel good about myself	4	13	0.070
Improve my strength	7	10	0.437
Improve/maintain my ability to perform day to day tasks	6	11	0.563
Help to maintain or lose weight	6	14	0.204
Other	0	2	0.387

How people became involved in physical activity

The 11 people who were currently active were asked to identify how they had become involved in physical activity. Nine people answered, the majority of whom said that they had become active because they wanted to (50% n=5), although this was often stated in conjunction with other reasons such as their parent/carer encouraged them or their doctor had advised them to. The responses are tabled in 5.5

Table 5.5 Ways in which individuals identified they had become involved in physical activity

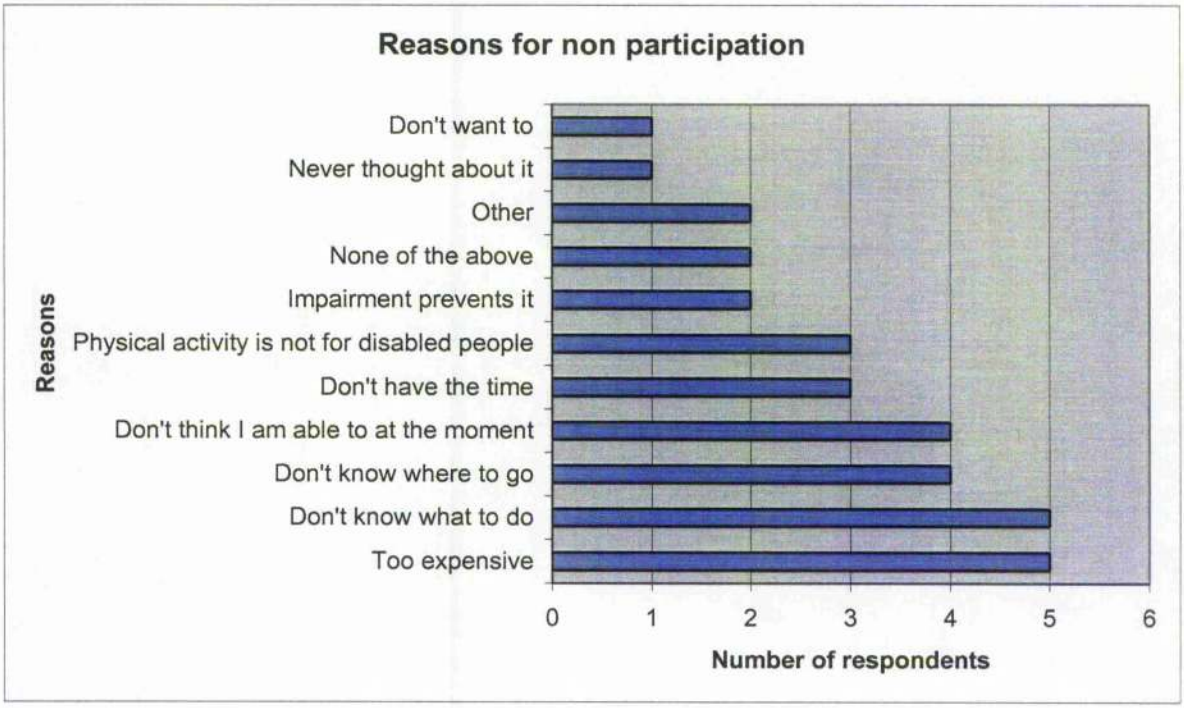
How became involved	Frequency (n=)
Decided I wanted to	5
Parent/carer	4
Doctor advised me	4
Leisure centre advertisement	1
Through school	0
Through Friends	0
Other	1

The remarks made in the 'other' response included 'always been sporty'.

Reasons for nonparticipation

Those individuals who said that they were not currently active and had no intention of becoming active and those who said they were not currently active but had been thinking about it were asked to cite why they were not involved in physical activity. The highest responses were that it was 'too expensive' and that they 'don't know what to do' although this corresponded to only 5 individuals respectively (29.4%). There was little difference between the number of responses for each reason.

Figure 5.3 Reasons individuals identified for non participation in physical activity



Physical activity behaviour

Based on the PADS questionnaire, those who said they were currently active and involved in structured activity were asked a series of questions about the types, frequency and duration of physical activities they were involved in. The data for those who had indicated that they were involved in more leisure type activities (n=2) was incomplete and is therefore not reported. The results for people involved in structured activities are tabled in tables 5.6 - 5.9.

Table 5.6 Type of activity individuals identified that they were involved in

Respondent	Composition of their activity programme		
	Aerobic	Strength	Flexibility
1	✓		
2	✓	✓	
3	✓	✓	
4	✓	✓	
5	✓		
6	✓		
7	✓		
8	✓		✓
9		✓	

Eight of the nine respondents (88.9%) were doing some form of aerobic activity, 4 were doing strength (50%) and 1 was doing flexibility (12.5%). With regards to the actual activities being undertaken within each of these types of activity, the range was quite diverse. Table 5.7 outlines the actual activities individuals were participating in.

Table 5.7 The actual activities individuals identified that they were involved in by type

Respondent	Actual activity within their programme		
	Aerobic	Strength	Flexibility
1	Walking		
2	Swimming	Cardiac Rehab	
3	Biking and Rowing machines	Training machines	
4	Swimming	Movement Therapy	
5	Biking		
6	-		
7	Walking		
8	Gym/bike/crosstrainer/rowing		Taichi
9		-	

In order to gauge how regularly individuals were participating in the above activities, individuals were also asked to indicate how many times a week they were participating in the activity they had previously indicated. Table 5.8 outlines the frequency of individuals' participation.

Table 5.8 The number of sessions individuals identified participating in per week

Respondent	Composition of their activity programme (n= number of sessions)		
	Aerobic	Strength	Flexibility
1	-		
2	5	3	
3	6 (3+3)	3	
4	4	1	
5	3		
6	1		
7	-		
8	1		1
9		5	
Average number of sessions per week	2.5	3	1

On average those who had given frequencies and were participating in aerobic activity did so approximately 3 times a week. Those who were participating in strength activities averaged approximately 3 times a week. Only 1 person indicated that they participated in flexibility activities and this was carried out once a week.

Table 5.9 How long individuals spent per session participating in activity

Respondent	Duration of time spent participating in activity programme (n= number of minutes)		
	Aerobic	Strength	Flexibility
1	-		
2	30	60	
3	20+15	20	
4	45	20	
5	30		
6	30		
7	30		
8	20		25
9		30	
Average duration of participation (rounded up to nearest minute)	**32**	**33**	**25**

With regards to the time spent participating in physical activity, those participating in aerobic activity did so on average for 33 minutes a day. Those taking part in strength activity on average spent 33 minutes a day participating, with the only person who identified themselves as doing flexibility work spending 25 minutes a day doing so.

Of those participating in physical activity, 62.5% (n=5) identified their programme as being of moderate intensity i.e. where you breathe a little harder and may possibly sweat. The remaining 37.5% (n=3) said their programme was light. No one identified his or her programme as being of a vigorous intensity.

Four respondents stated that they had been participating in physical activity for more than a year with 3 stating that their participation in activity had been for less than 1 year. Two people chose not to answer this question.

Other activities.

Individuals were asked several questions taken from the PADS tool, the first of which related to household chores.

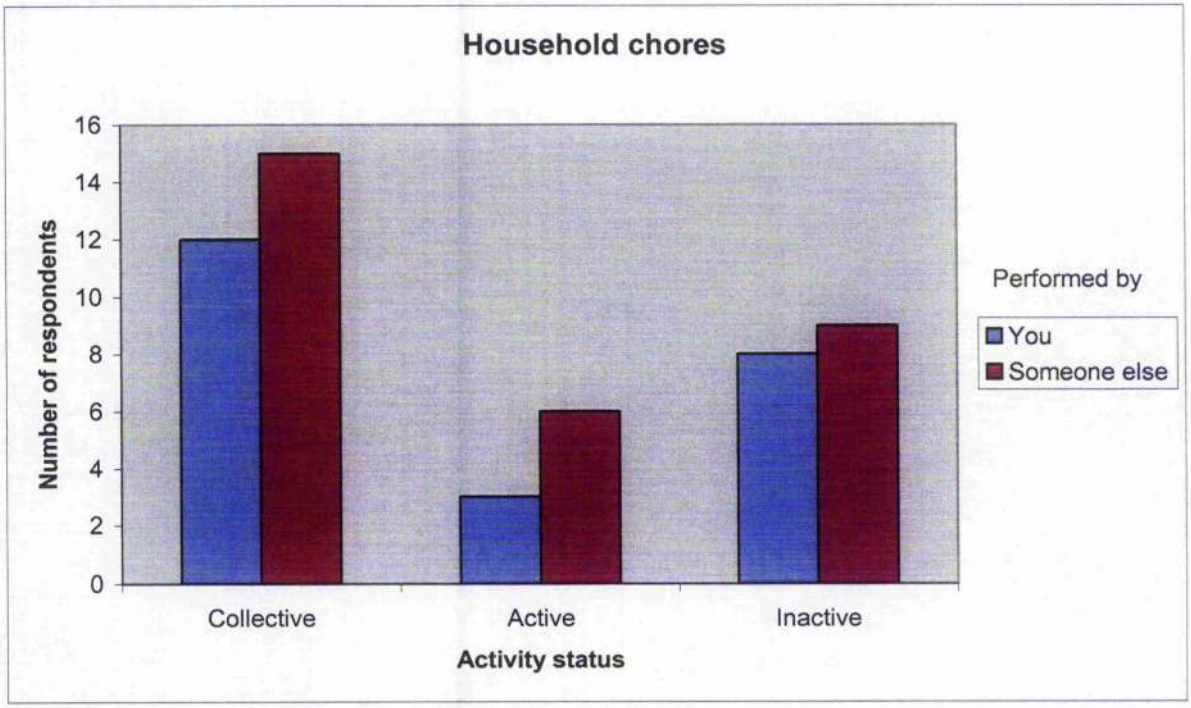
Household chores

Individuals were asked to indicate whether their household chores were done by themselves or someone else. Approximately 56% (n=15) of those who responded said that someone else did their household chores for them. Of these 15 respondents the majority were currently inactive (60%). Of the 12 respondents who did their own household activities, 8 identified themselves as being inactive and 3 were active, 1 did not answer.

Looking at these figures proportionally, a higher percentage of the inactive group compared to the active group were performing household activities for themselves (47.1% v's 33.3), although no significant difference was found (p=0.402).

Although collectively the majority of individuals had their household activities done for them, what these findings do indicate is that a number of individuals who identified themselves as being inactive were actually getting some physical activity through household activities.

Figure 5.4 Illustration of who performed household chores by activity status

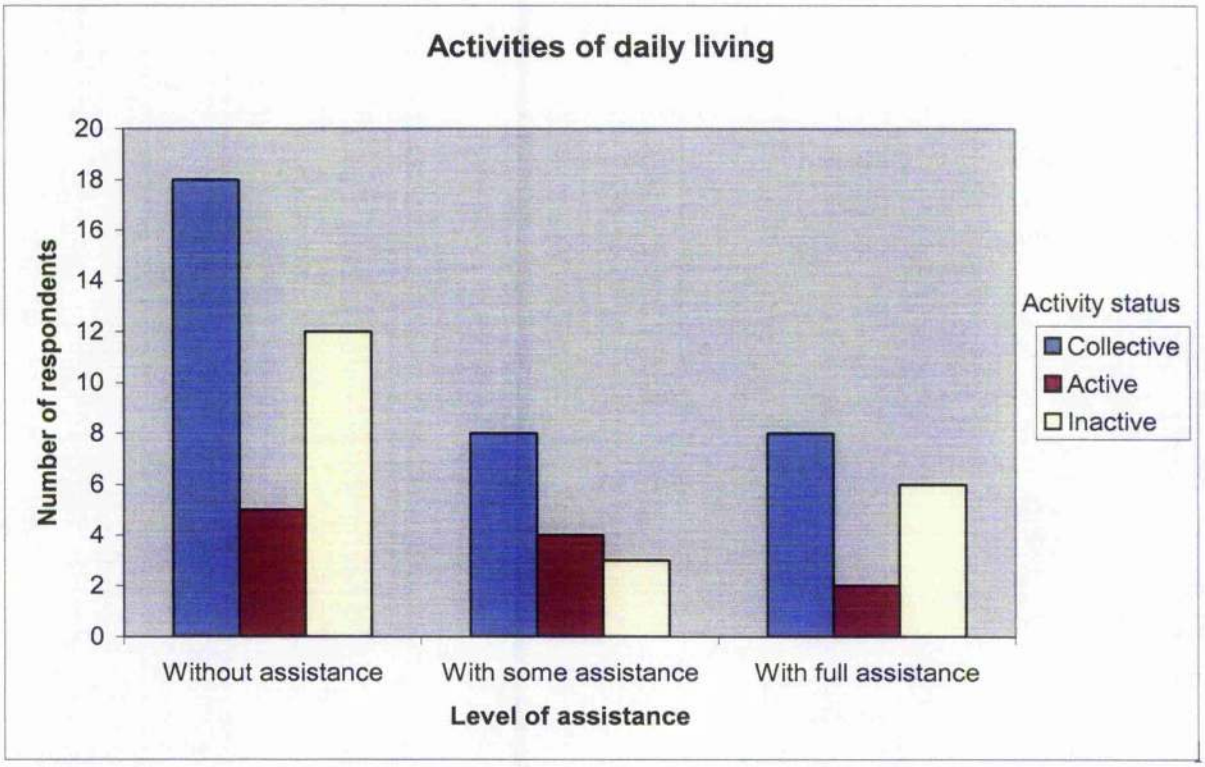


Activities of daily living

In addition to questions about household chores, individuals were also asked about activities of daily living such as dressing and bathing and whether these activities were performed without assistance, with some assistance or with full assistance. Fifty-three percent (n=18) of respondents said they performed activities of daily living with no assistance, 23.5% (n=8) said they required some and 23.5% (n= 8) said they required full assistance.

Of those who were active 45.5% (n=5) said they required no assistance, 36.4% (n=4) said they required some and 18.2% (n=2) said they required full assistance. Of those who were inactive 57.1% (n=12) said they required no assistance, 14.3(n=3) said they required some and 28.6(n=6) required full assistance. Higher proportions of those in the inactive stages required no assistance and full assistance than in the active stages, but the difference was found not to be significant (p=0.349).

Figure 5.5 Illustration of the degree of support required when performing activities of daily living by activity status

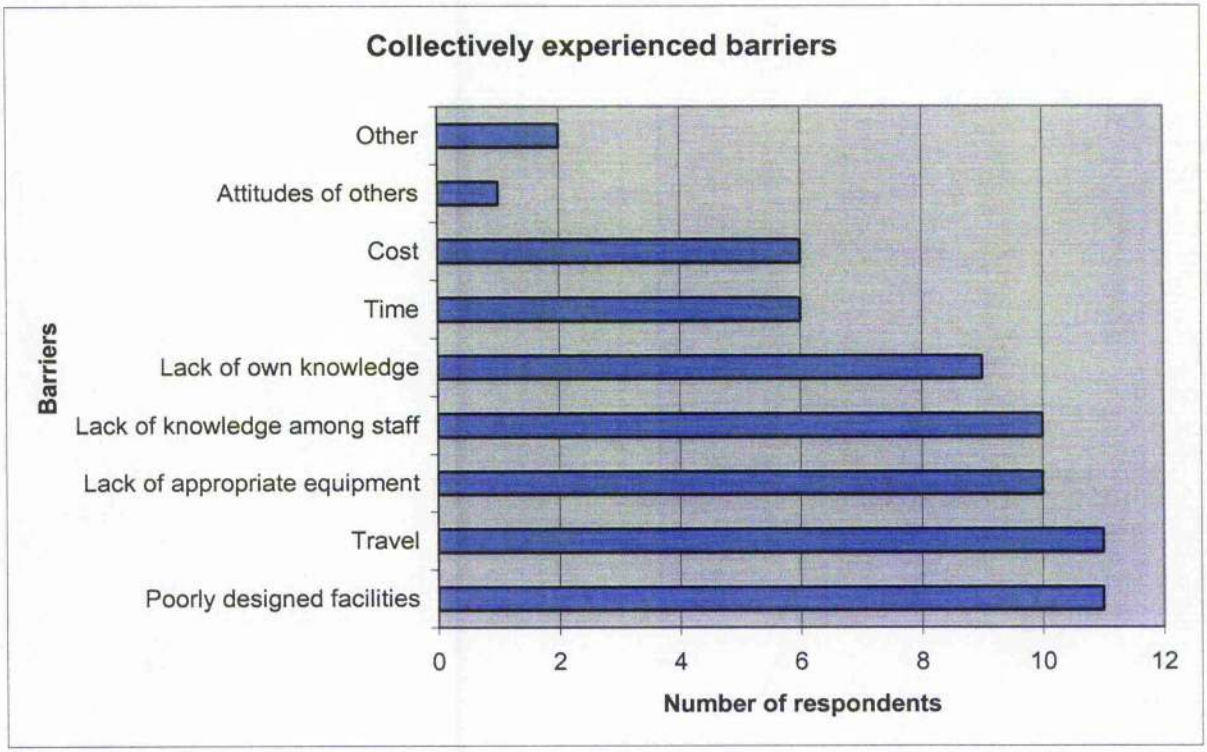


Similar to the findings relating to household chores, the results of this questionshow that otherwise inactive individuals were getting some activity through other means, in this case activities of daily living.

Difficulties/ Barriers

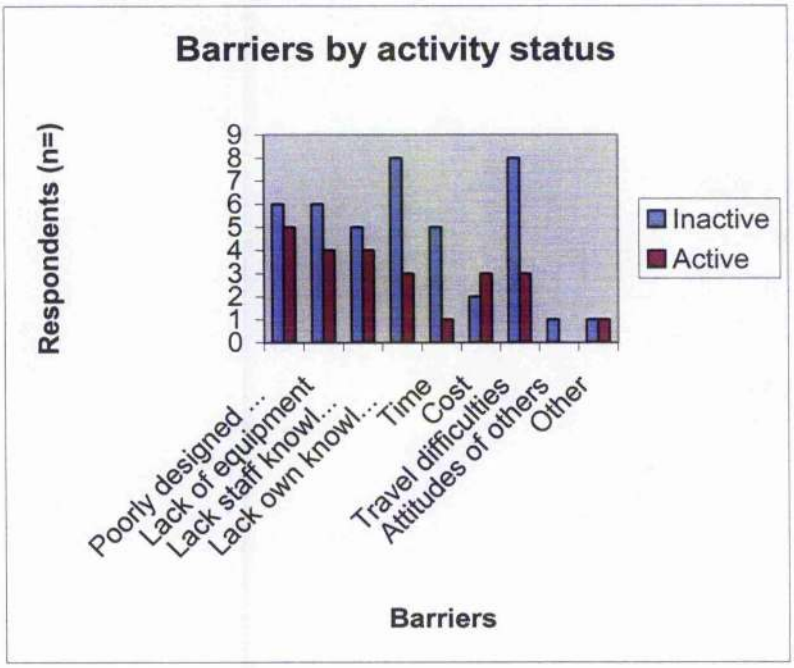
32 individuals answered the question asking if they had ever experienced any problems or difficulties which had stopped them doing physical activity. 25 individuals answered yes (78.1%). When asked to identify key barriers in relation to physical activity the responses are shown in figure 5.6 collectively and then separately for those who were active and inactive.

Figure 5.6 Illustration of the barriers experienced by inactive and active individuals collectively



Looking at the results collectively the top 4 barriers for individuals relate to design of facilities, travel, lack of equipment and lack of staff knowledge. When the barriers were looked at in terms of people's activity status, the barriers were as shown in figure 5.7

Figure 5.7 Illustration of barriers experienced by activity status



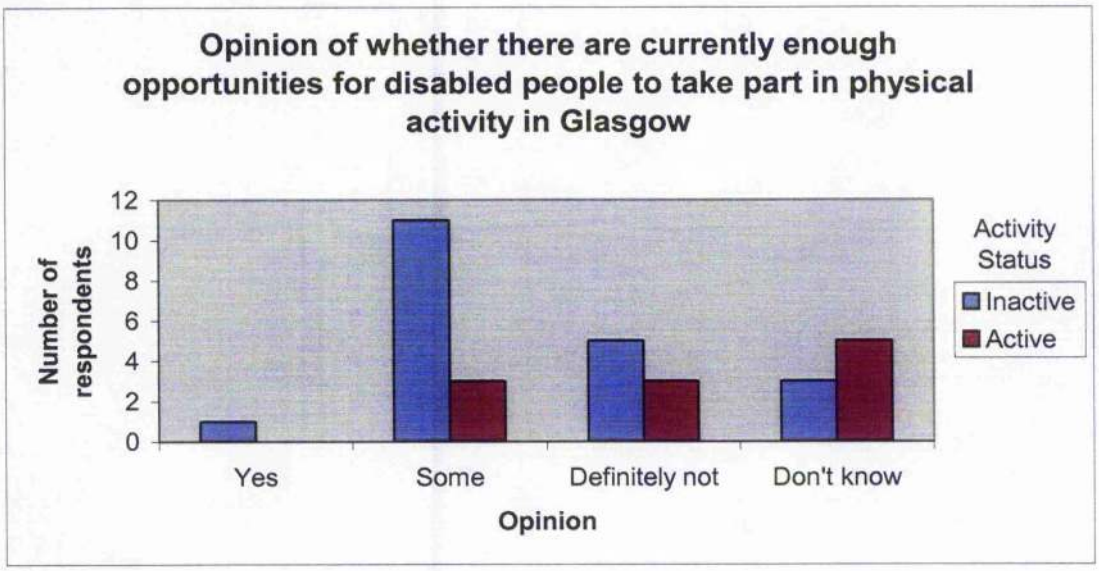
For those who were inactive, lack of own knowledge about what to do appeared to be the most commonly experienced barrier alongside travel difficulties. For those who were active, poorly designed facilities was the most frequently reported barrier followed by lack of equipment and lack of staff knowledge.

Current opportunities

When asked about the current opportunities available to disabled people the majority (48.5%) said that there were some, but not as many as for non-disabled people. Eight people stated that there were definitely not sufficient opportunities for disabled people to take part in physical activity (24.2%) and 8 said they did not know (24.2%). Only 1 individual felt there were the same opportunities as for non-disabled people (3%).

Looking at these views in terms of activity status, there were no significant differences in the views of those who were active and those who were inactive (p= 0.229). More of those who were active than inactive felt that they did not know if there were enough opportunities to take part in physical activity than in the inactive group.

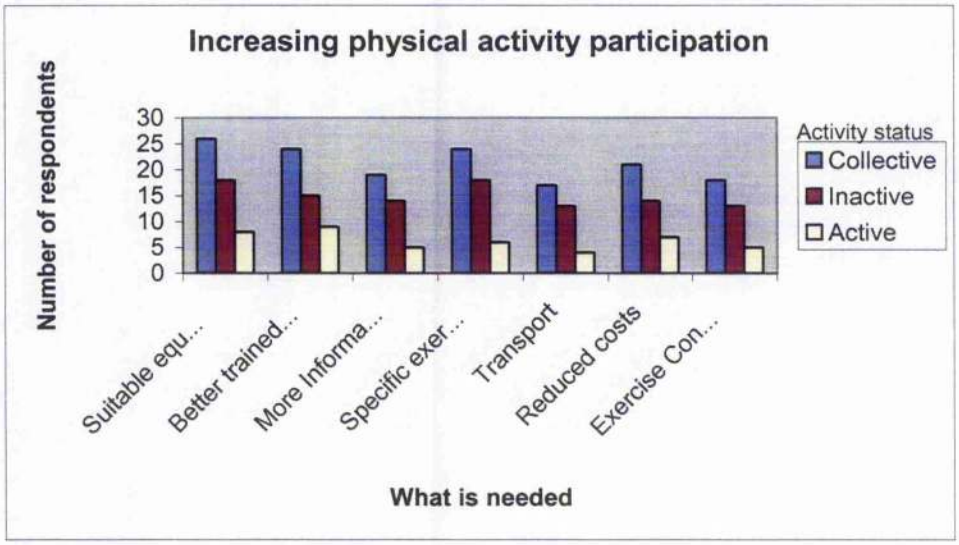
Figure 5.8 Illustrations of individual's perception of the available opportunities in Glasgow by activity status



Increase physical activity participation

97% of respondents said that more could be done to enable those with a physical impairment to participate in physical activity. Only 1 person said no (3%). Figure 5.9 illustrates what people indicated they thought was needed.

Figure 5.9 Illustration of what individuals identified as being required to increase participation in physical activity amongst those with a physical impairment in Glasgow.



Collectively (active and inactive) respondents felt that suitable equipment; better trained staff and specific classes were the three main things that would enable people to become more active. Those who were active most commonly identified better trained staff, suitable equipment and reduced costs, whilst those who were inactive said specific classes, suitable equipment and better trained staff.

Parents and Carers - Return rate

A total of 140 questionnaires were sent to organisations to be distributed. Of the 140 questionnaires, a total of 46 were returned. Three questionnaires were rejected for the following reasons: two did not fit the inclusion criteria as the person being cared for did not have a physical impairment, the other was blank and with a covering note explaining that they were unable to complete it due to recent bereavement. 43 questionnaires were included yielding a 30.7% return rate. Although the return rate was reasonable for a postal questionnaire, the following results should be viewed with caution as they reflect a relatively small number of individuals.

Respondents

Of the 42 respondents who identified their gender (97.7%), 81% were female (n=35) and 16.3% were male (n=7), perhaps reflecting gender differences with regards to 'caring' roles. In terms of age the majority of respondents (51.2%) were over 55 (n= 22) with 75% of males (n=3) and 54.3% of females (n=19) identifying themselves as being in this age range. No one identified himself or herself as being younger than 25 with only 2 individuals responding to being in the 25-34 age bracket. Three males and 1 female chose not to identify their age.

Table 5.10:Table outlining the age of the respondents

Age of respondents	Number of respondents
25-34	2
35-44	6
45-54	8
Over 55	22

Person they care for

In terms of gender there was virtually a 50:50 split. Just under half (48.8%) of the individuals being supported were male (n=21) and just over half (51.2%) were female. The majority of respondents (72.1%) were supporting someone over the age of 45 with 9.3% (n=4), 4.7% (n=2) and 9.3%(n=4) supporting individuals in the 35-44, 25-34 and under 16 brackets respectively.

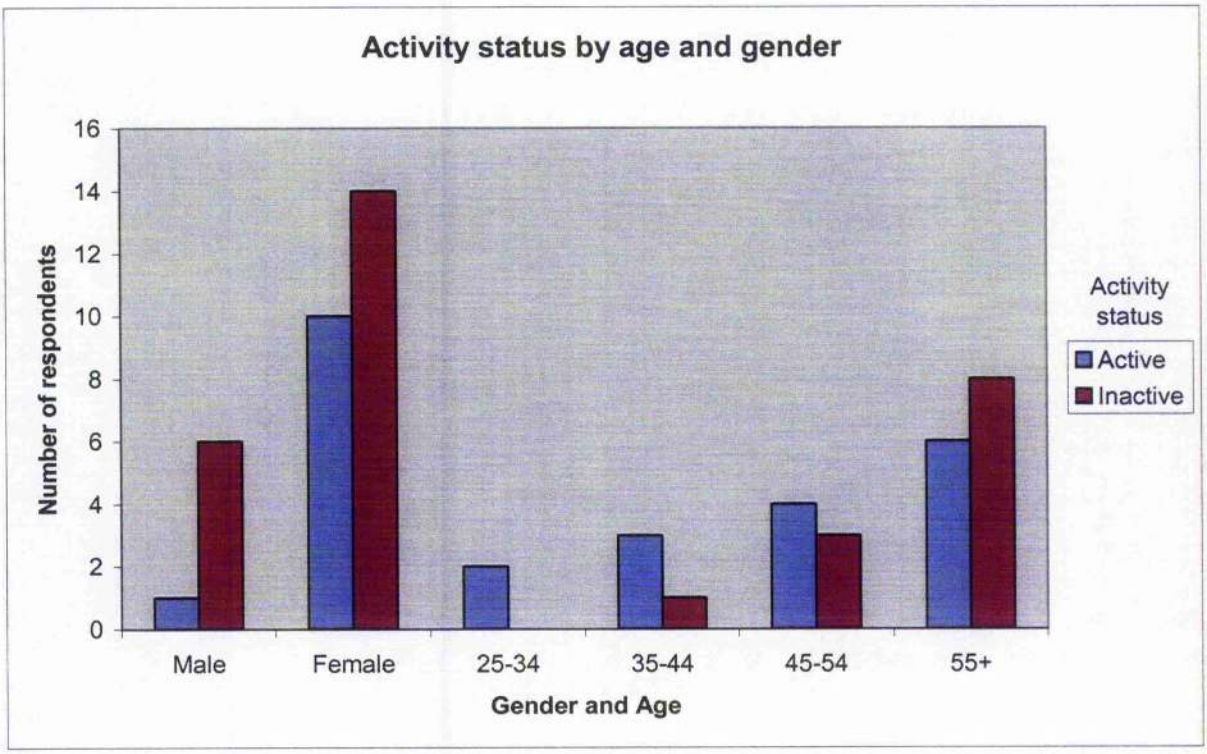
The individual respondents supported generally (42%) had an impairment other than was listed on the questionnaire. Within the category 'other' there were a range of impairments with not everyone listing what this other impairment was. Therefore collectively the most commonly reported impairment (32.6%) was stroke (n=14). This would seem apt given the age of those being supported. Cerebral palsy was the next most common impairment (9.3%, n=4), with those individuals with cerebral palsy comprising the younger age of the

spectrum. 50% (n=2) of those who had cerebral palsy were under 25 and the other 50% were under 16.

Activity Status

Of the 41 parents/carers who responded to the question about their own activity status, 21 were inactive (51.2%) and 20 were active (48.8%). Six of the 7 males (85.7%) and 14 of the 33 women (42.4%) responding to this question identified themselves as being inactive. There were no significant differences between the gender of respondents and their activity status. Although the p value was less than 0.05, which would suggest statistical significance (p=0.046), more than 25% of cells had an expected count of less than 5 which means that any statistical difference found was not valid due to small sample size. There was no significant difference between the age of respondents and their activity status (p=0.609).

Figure 5.10 Illustration of the activity status of those parents/carers responding according to their gender and age.



How highly parents and carers rate physical activity as a means of health improvement

On a scale of 1-10 individuals were asked to indicate how highly they rated physical activity as a means of health improvement. Eighty-eight percent of respondents rated physical activity above 5 with 73.6% of individuals (n=28) giving it a rating of 8 or higher. This would suggest that those responding to the questionnaire felt that physical activity had an important role to play in improving health. There was no significant difference between how highly people rated physical activity status and their own behaviour (p=0.115).

Benefits of physical activity for the person they care for

Although the vast majority of individuals rated physical activity as being highly important in terms of health improvement, over half (51.2% n=21) of those answering the question felt that the person they cared for would not benefit from participation in physical activity.

The majority of those parent/carers who felt that physical activity would not benefit the person they cared for, were themselves inactive (69.2%) although no significant difference was found between parent/carer behaviour and the belief about the benefit of physical activity for the person they cared for (p=0.102). Table 5.11 details the benefits those parents/carers who felt there were benefits believed the person they cared for could derive from participation.

Table 5.11 The benefits parents/carers perceive the person they care for could derived from participation in physical activity

Benefit	Number of parent/carers responding (n=)	Frequency (%)
Improved fitness	8	48%
Opportunity to meet new people	7	36.8%
Improved confidence and self esteem	10	52.6%
Improved strength	6	31.6%
Improved/maintained ability to perform day to day tasks	7	36.8%
Weight loss/ maintenance	5	26.3%

Improved confidence and self-esteem, was the most commonly cited benefit, followed by improved fitness.

Activity status of son/daughter/person they care for

The majority of respondents (76.7%) said that the person they cared for was not currently active (n= 33). There was no significant difference in terms of gender (p=0.608) or age between those who were active and those who were not (p=0.608). This data relating to gender is illustrated in figure 5.11 and for age is tabled in 5.12

Figure 5.11 1llustration of the activity status of those people being cared for by the respondents collectively (males and females) and by separate gender.

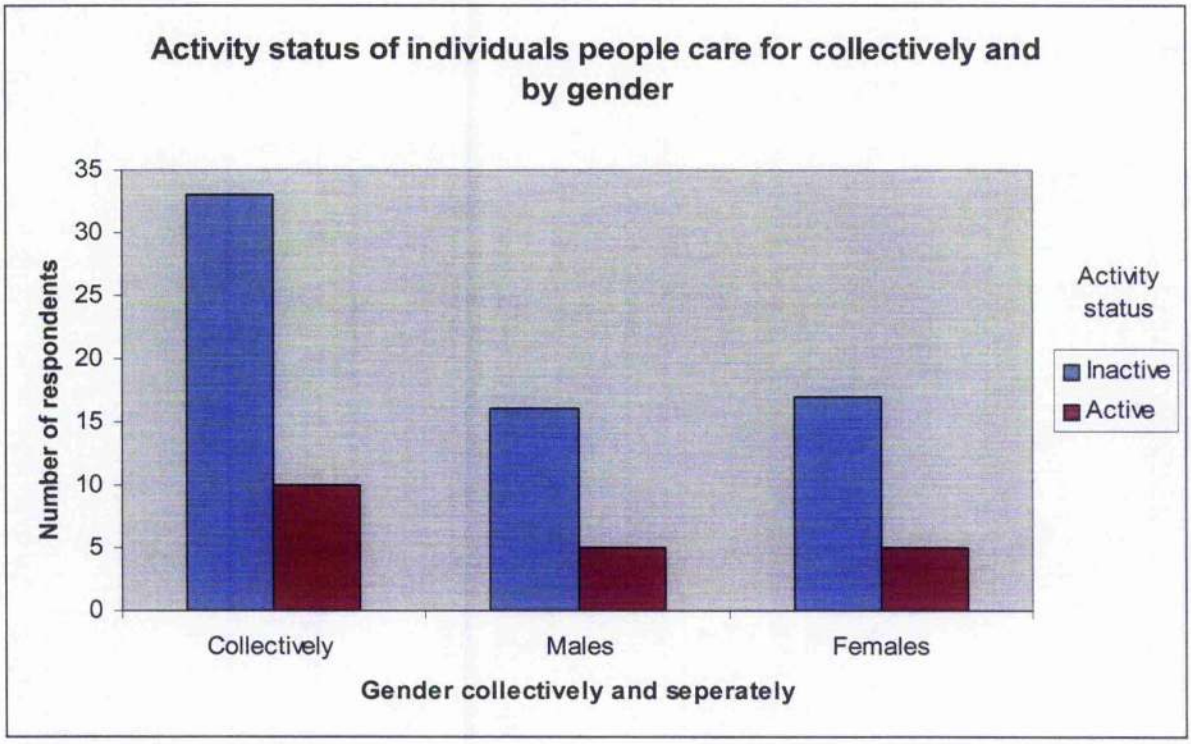


Table 5.12: Age of those who were reported by their parent/carers as being inactive and active

		Does your son/daughter/person you care for do any activity at the moment	
		Yes	No
Age – son/daughter /person you care for	Under 16	0	4
	16-25	2	0
	35-44	1	3
	45 and over	6	25

None of those under 16 were active, whereas both individuals between 16 and 25 were active. The majority of those between 35 and 44 (75%) and those 45 and over (80.6%) were inactive.

Activity status of son/daughter/person they cared versus their own behaviour

Just over 55% (55.6%) of parents and careers who supported someone who was involved in physical activity were active themselves. The reversal was true of those parent/carers who supported someone who was inactive, with 51.5% of those who supported someone who was inactive doing no activity. Despite this finding, parent/carer behaviour did not appear to be a significant predictor of the behaviour of the person they cared for (p=0.466).

Physical activity behaviour of the people the respondents care for

Of the 9 individuals who answered this question, 8 identified that the person they cared for took part in some form of aerobic activity, 2 people indicated that the person they supported took part in strength training. In terms of actual type of activity the activities listed included:

1) Swimming	2) Bowling	3) Walking
4) Gym work (strength training)	5) Physiotherapy	6) Keepfit

With regards to the frequency of sessions and duration of the sessions, the responses are tabled below in table 5.13 and 5.14

Table 5.13 Frequency individuals were involved in activity on a weekly basis as identified by parents/carers

Respondent	Composition of their activity programme (n= number of sessions)		
	Aerobic	Strength	Flexibility
1	2		
2	5	3	
3	2		
4	-	-	-
5		2	
6	1		
7			1
8	-	-	
9	3		
10	1		
Average number of sessions (roundedup)	**3**	**3**	**1**

Table 5.14 How long individuals spent per session participating in activity as identified by parents/carers

Respondent	Composition of their activity programme (n= number of minutes)		
	Aerobic	Strength	Flexibility
1	90		
2	30	60	
3	5		
4	-	-	
5		-	
6	30		
7			30
8	-	-	
9	5		
10	30		
Average duration per session (rounded up)	32	60	30

Those participating in aerobic activity did so on average twice a week although the range varied from 1 –5 times a week, for a duration of 32 minutes with a range of 5-90 minutes. Two people indicated the individuals they cared for performed strength training 2-3 times a week, however only 1 individual gave an indication of duration which was 60 minutes. One person thought the person they cared for was participating in flexibility work for 30 minutes, in actual fact the activity indicated would appear to be more aerobic in nature e.g. keepfit. However it was felt more appropriate to reflect what the individual had indicated and it was put in the flexibility column.

Parents and carers were asked to identify where the person they cared for participated in their physical activity, 30% (n=3), 10% (n=1), 10% (n=1), 50% (n=5) responded local

leisure centre, community centre, hospital and other respectively. Other included outdoors and bowling green.

Reasons for non participation

For those who said the person they cared for was currently inactive, the question was firstly posed as to whether they had ever participated in physical activity. Of the 33 respondents, 17 (51.5%) replied yes they had and 16 (48.5%) said no they had not. A supplementary question tried to establish why the person they cared for was not currently active. Parents and carers were given a list of suggestions including a space for any reason that may not have been listed. The results are tabled in 5.15.

Table 5.15 Reasons parents and carers gave for the person they cared for not being involved in physical activity

Reason	Percentage (%)	Frequency (n=)
Their impairment/disability prevents it	96.6	28
There are few opportunities in our area	6.9	2
The timings of the opportunities don't suit	3.4	1
Other	3.4	1
They chose not to be	0	0
They used to be but stopped as an adult	0	0
I have never considered it an option for them	0	0
They used to be but stopped as an adult	0	0
I have never considered it an option for them	0	0

The vast majority of parent and carers attributed the reason for non-participation to the individual's impairment. Only 2 people said that there were few opportunities in the area, with one person identifying that the timings were not suitable. The other reason identified by one parent/carer was that they had only recently moved to the area and were still trying to work out what was available.

Barriers/difficulties

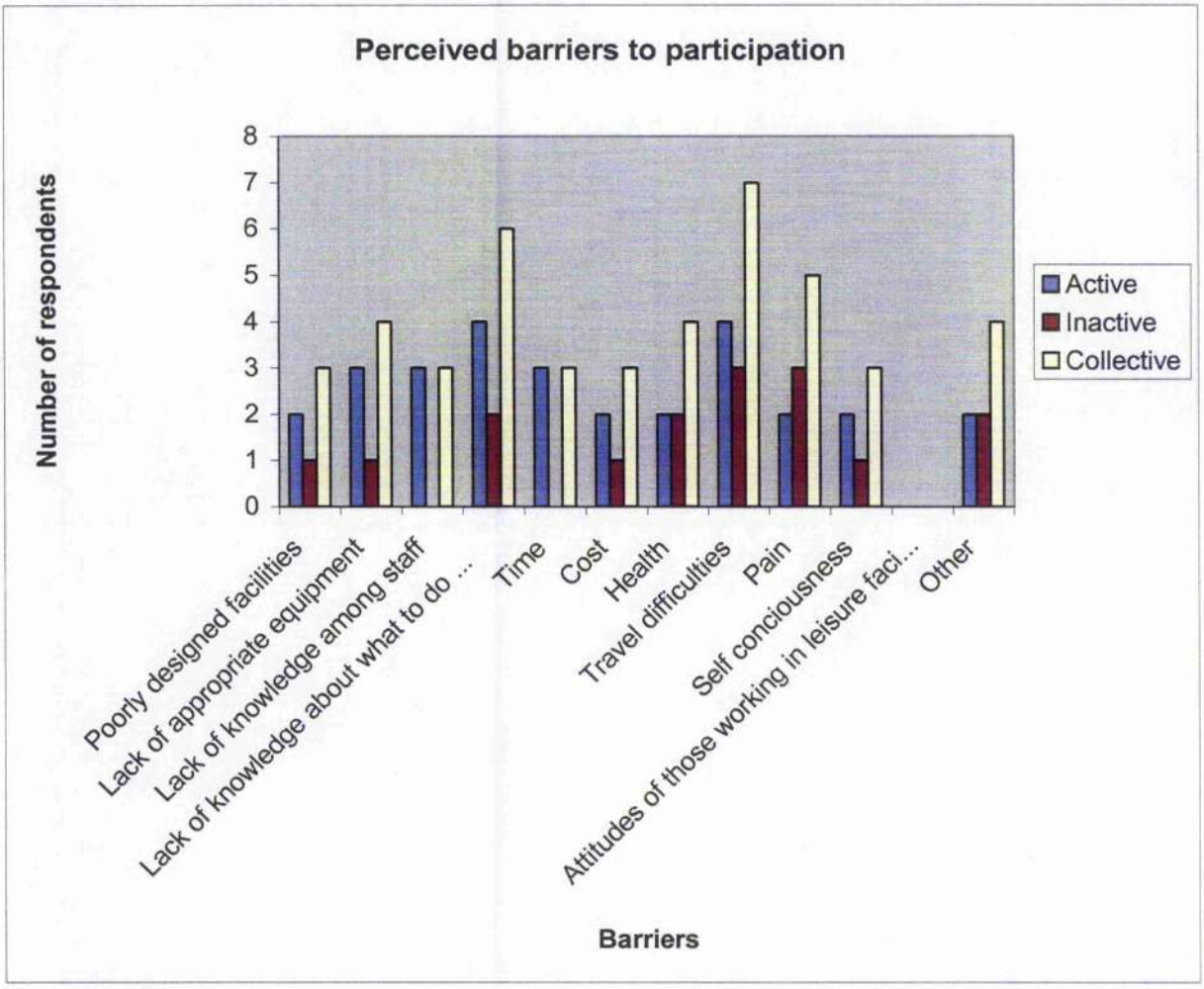
Those parents and carers who cared for someone who was inactive were asked whether the person they cared for had experienced any barriers to physical activity participation. Of the 33 individuals who cared for someone who was inactive, 28 chose to answer the question. Eight (28.6%) said yes, 71.4% (n=20) said no.

Those who said yes were then asked to identify what these barriers were. Although only 8 people said yes the person they cared for had experienced barriers, 10 individuals actually identified barriers. Travel was identified by the majority of respondents as something that was problematic to those with a physical impairment.
Parents and carers of active individuals were asked what they felt were the key barriers to participation for those who had a physical impairment. Of the 9 (90%) who answered, the most commonly identified barriers were lack of knowledge as what to do and travel.

Among respondents supporting someone who was inactive, pain was ranked higher than among those supporting someone who was active. Lack of knowledge about what to do and what was available was again ranked highly perhaps indicating the need for greater awareness raising among disabled people and parents/carers.

The views of parents and carers are graphically illustrated collectively and then separately for those who support someone who is active and someone who is inactive in figure 5.12

Figure 5.12 Illustration of perceived barriers to participation for the person they cared for by activity status



Facilities

When asked how well they thought leisure facilities are designed to accommodate the needs of people with a physical impairment/disability 62.8% (n=27) said they did not know as they hadn't been in one recently. Just over 25% (25.6%, n=11) said reasonably well, 9.3% (n=4) said not well at all, with the remaining 2.3% (n=1) saying very well. All of those parent/carers who replied not well at all, supported someone who was currently active.

Staff

The vast majority of parent/care said that they had too little experience to comment (53.8%, n=21) on the knowledge and understanding of staff with regards disability. Some

(28.2%) said they felt individuals had a general understanding (n==11), with 7.7% (n=3) saying they felt staff were well informed and accommodating. Four respondents (10.3%) believed that staff needed more training.

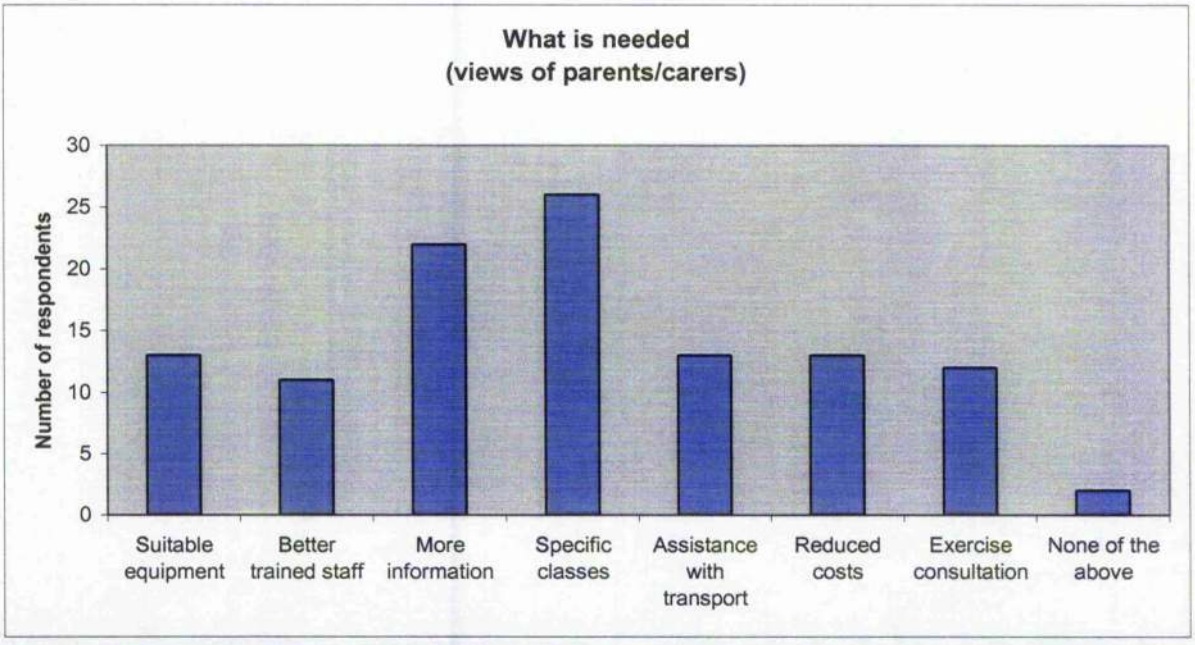
Current opportunities

The majority of respondents (57.1%, n=24) said that they were not sure if there were currently enough opportunities for disabled people to take part in physical activity. Ten individuals said there were some but that more was needed (23.8%) and 5 said there were insufficient opportunities available (11.9%). Only 7.1% of respondents (n=3) felt that there were currently the same opportunities available for disabled people as for non disabled people.

Increasing participation

Nintey-five percent of individuals (n=38) felt that more was needed to increase physical activity participation amongst disabled people. Specific classes for those with a physical impairment and more information for individuals and their parents and carers were the two most commonly identified requirements. There were few differences between the remainder of suggestions. Assistance with transport, suitable equipment, reduced cost, exercise consultations and better trained staff were all clearly identified as being beneficial in enabling people to become more active.

Figure 5.13 Illustration of what parents and carers identified as being needed to enable those with physical impairments to become more active.



When the data was examined in more depth, there were no significant differences in terms of what parents who supported someone who was active, and those who supported someone who was not, felt was required. What the data did show was that active parent/carers were more likely to think that staff required more training than those parent/carers who were inactive (p=0.018). Additionally those parents/carers who were active but supported someone who was inactive were more likely to think that there was a need for more information than those parents/carers who were inactive and supported someone who was inactive (p=0.038).

Discussion

As has been outlined previously the benefits of physical activity participation are well documented and local and national policies have been established to encourage concerted and coordinated action to increase physical activity levels as a means of improving individual and societal health (Glasgow Healthy City Partnership Physical Activity Forum, 2004; Scottish Executive, 1999c, 2003b; Surgeon General, 1996). Whereas much research has been carried out with the general population there is limited information available with regards to disabled people and physical activity participation making planning appropriate interventions difficult(Heath & Fentem, 1997). The purpose of this study was to gather information with regards to the following areas in order to form recommendations, which could better inform planners and exercise professionals as to what is needed for those with physical impairments:

- What the beliefs are of those living in Glasgow with a physical impairment with regards to physical activity
- What the current level of the physical activity is amongst those with physical impairments living in Glasgow
- What barriers they experienced locally with regards to physical activity participation
- What individuals with physical impairments think would help increase physical activity participation in Glasgow
- Views of parents/carers and the training needs of staff working in Glasgow City Council leisure facilities.

Perceived value in participation and activity status

As outlined in the literature review in Chapter 2, the process of behaviour change is complex (Naidoo & Wills, 1994). Individuals do not tend to move simply from one behaviour to another (Naidoo & Wills, 2000; Scot Porter Research and Marketing Ltd, 2001). Behaviour change is often influenced by a variety of factors, not least the personal beliefs of the individual about the particular behaviour and also other people's perceptions of that behaviour (Naidoo & Wills, 2000; Scot Porter Research and Marketing Ltd, 2001). In this study what was encouraging was that the majority of individuals did actually believe that they could personally derive some benefit from physical activity namely with regards to their fitness levels, which would perhaps suggest that they would be open to the possibility of participation. Interestingly despite many parents identifying that they thought physical activity was very important in terms of health improvement the majority did not think that the person they cared for could benefit; those that did thought these would be inrelation to self esteem and confidence. Most of whom said they did not believe there were benefits to be derived were inactive themselves, although no statistical difference was found between parental belief and their own physical activity behaviour; the lack of significant difference perhaps implying that their less positive belief for the person they support was due to some other factor. Certainly when those who supported someone who was inactive were asked why the person they supported did not participate the majority indicated that their disability prevented it.

What these findings do suggest is that there are individuals in Glasgow who are supporting individuals with physical impairment who may not recognise that physical activity may be of benefit to the person they support and therefore may not actively be encouraging or supporting their participation. In chapter 2 reference was made to the study by Heller (2002) who suggested that parental/carer behaviours/beliefs may have an affect on the behaviour of the person they support (Heller et al., 2002). In this study when examining the data generated from the parent/carers questionnaire this did not appear to be the case although many were supporting someone of a similar age and these individuals were often within the older age brackets perhaps suggesting a spousal or sibling relationship, which may have had an affect on the findings. Parents/carers were however in addition to GPs mentioned within the questionnaire for those with physical impairments as being influential in their participation in physical activity implying that education with parents/carers may help to address any negative beliefs and encourage them to promote

activity to the individuals they support. Given that it is likely that many individuals may be in contact with their GP on a fairly regular basis GPs may also be another means through which to actively encourage those with physical impairments to uptake and adhere to physical activity.

Activity status

The research that does exist around disabled people and physical activity would suggest that they are less active than non disabled people (C. P. a. K. Coyle, W.B., 1990; Ng & Kent-Braun, 1997; Rimmer, Rubin et al., 1999; Seefeldt et al., 2002). Whilst in this study it was not possible to draw comparisons between those taking part in this study and the general population of Glasgow as a whole, as with the general population, despite believing that there was some benefit to be derived from participation, the majority of respondents with physical impairments who responded to the questionnaire indicated that they that they were not currently active. The numbers responding to the questionnaire were small, and therefore perhaps not reflective of the behaviours of all those living in Glasgow with a physical impairment. However parents/carers also reported high levels of inactivity among the people they cared for and even as a snapshot, it does suggest that there are a number of individuals living with a physical impairment who are not involved in physical activity, which may have implications for their immediate and long term health. The challenge for exercise professionals in establishing what may be preventing participation given that the underlying feeling is that participation would and could benefit those individuals with physical impairments who responded.

Differences in activity status related to age and gender were examined during this study as research within the general population would suggest that on the whole women tend to be less active than men and that activity levels often decrease with age(Scottish Executive, 2003b). In this study there were a larger percentage of females than males who were inactive but the difference was not found to be significant differences although as with much of the analysis the findings are likely to have been affected by the small sample and the even smaller numbers of individuals actually reporting to being active.

Research indicates that whilst many people in lower socioeconomic groups meet the minimum recommended levels of physical activity for health gain through manual labour

and because of low car ownership, the proportion that are sedentary is far greater than amongst those who are more affluent (Scottish Executive Health Department, 1998). To assess whether this may also be the case amongst those with physical impairments individuals were asked to identify the first part of their postcode, which would have identified the deprivation band of the area in which they lived. Only 1 person chose to do so and therefore no analysis could be done to establish if there was a link.

Individuals were also asked a series of questions about employment to establish whether they may be getting some activity through their place of work and also to see if participation in physical activity was in any way linked to employment status. Disabled people are generally in lower income jobs than many non-disabled individuals or are unemployed (Scottish Executive, 1999c). The Scottish Household Survey reported that 40% of all disabled people live in poverty which may impact on their ability to participate in physical activity due to lower disposable incomes and indeed cost of activity has been cited in several studies as a barrier to participation (Messent et al., 1999a). In this study however those who were employed were no more likely to be active or inactive than those who were retired or unemployed, although again the numbers who were active were small as were the number of individuals who were employed making it difficult to draw firm conclusions. Of those who were employed some did appear to be getting some activity as part of their journey to work.

The question, relating to employment was taken from the Physical Activity and Disability Survey, and failed to ask whether people were in further education. Although the inclusion of this category would probably have had little impact in terms of the findings with regards to activity status, it would have been more fitting, in line with the question, to have included it. Ethnicity was not included which was an oversight as this would have allowed analysis to be carried out to see whether there were differences in activity status based on ethnicity, which like age and gender has been shown to have relevance to activity levels. However, given that the majority of individuals were inactive it is unlikely that this analysis would have concluded any significant results.

Types and frequency of participation

Most of the tools that have been used to measure activity levels have mainly been developed and validated with non-disabled people and therefore until recently there has

been limited scope to assess the levels of activity being undertaken amongst disabled people and make comparisons between the levels undertaken by disabled and nondisabled people and make specific recommendations for this population. It was therefore felt important to try and gauge the types and frequencies of activity individuals with physical impairments living in Glasgow were participating in including less structured activities such as activities of daily living and household chores. This was assessed by adapting questions from Rimmers validated PADS tool and inserting them into the questionnaires.

Those individuals with physical impairments, who were active, were participating in physical activity on average 3 times a week in a variety of activities for just over 30 minutes each session. Of those answering the questionnaire for people with a physical impairment most said that their programme was of a moderate intensity, but as this study was purely qualitative there is no way to accurately validate this. Parents and carers also reported similar levels of activity amongst the people they cared, but this data should be viewed with a degree of caution because the information does not come from the people in question themselves. With regards to whether these individuals would be deriving any significant health benefits, it is difficult to say given the lack of research into the levels of activity required to bring about health benefits among disabled people.

Although the majority of individuals with physical impairments reported being inactive, the questionnaire was able to gather some information that would suggest that some otherwise 'inactive' individuals were deriving activity from less structured, lower intensity activities such as household chores, and activities of daily living. Just under 50% of respondents with a physical impairment used a wheelchair, the majority of whom used manual wheelchairs. It could therefore be surmised that some respondents might be getting some activity through manual wheelchair use. Although an attempt was made to quantify how long individuals spent manually pushing themselves on a daily basis no one chose to complete this question, which in hindsight would have been of limited benefit anyway given that there is no way to quantify whether the amount and intensity of activity would be sufficient to elicit any health benefits.

Individuals were asked to indicate how long they spent sitting or lying down excluding sleep to gauge how long they were engaged in sedentary activities. This question was part

of the PADS tool, which if used in its entirety would have given an indication of how active individuals were. In this study only certain questions were used because it was felt that the inclusion of every question would have made the postal questionnaire too long. In addition activeness was only one aspect of what was being investigated. However this question on its own is of limited use as there is no way to compare it to nondisabled people to say whether individuals in this study spent more or less time sitting or lying down than nondisabled people in Glasgow. Additionally the question fails to acknowledge that people may be active during that time.

Reasons for nonparticipation

Individuals with physical impairments indicated that the main reasons for nonparticipation was cost and not knowing what to do both of which have been cited as barriers in other studies with disabled people (Froehlich et al., 2002; Rimmer et al., 2004; Rimmer et al., 2000). It should be noted that due to the design of the questionnaire this study did not include the views of those people who had previously been active but were not longer active. In contrast to the parent/carer questionnaire, impairment and disability were listed much further down by those with physical impairments as reasons for nonparticipation. However the majority of the individuals the parents/carers were supporting did tend to be older than those individuals with a physical impairment who answered the questionnaire, which may help to explain the discrepancies. Additionally, it is hard to draw comparisons as the downside of asking parents/carers questions is that, unless the questions are also posed to the individual they support, there is no way of validating what is being said and is a potential drawback of this study. Because of the way the questionnaires were distributed this could not be helped but it would be recommended in future that any research done with parents and carers that includes questions about the beliefs/behaviours of the person they support, is validated with that person also.

Barriers to participation

Identifying and removing obstacles is an effective way of enabling people to adopt more physically active lifestyles. Those studies that have examined barriers within the disabled community have found barriers to participation that are often external to the individuals themselves and are more societal for example physical access, lack of suitable equipment; opportunities; transport; knowledge and cost (Levins et al., 2004; Rimmer et al., 2004;

Rimmer et al., 2000). In this small study many of the individuals with physical impairments responding to the questionnaire had experienced some form of difficulty/barrier that had stopped them from participating in physical activity. Poorly designed facilities, travel, lack of appropriate equipment, lack of own knowledge/information and lack of information among staff were commonly cited barriers, which very much support the findings from elsewhere (Froehlich et al., 2002; Rimmer et al., 2000).

What the questionnaire for individuals with physical impairments failed to do adequately was ask about more internalised barriers such as pain, health and self-consciousness. Although these are often less commonly reported in other studies than external barriers these elements were included in both sections of the parent/carer questionnaire where pain was the third most commonly reported barrier. The data produced from the parent/carer questionnaire cannot be used conclusively to represent the experiences of people with physical impairments as the information did not come from the person with the impairment himself or herself. However, it does suggest that pain, health and self-consciousness may well be significant barriers for some people. By excluding these barriers from the questionnaire for individuals with physical impairments there is no way to reliably conclude that social factors play more of a role than internal barriers for those with physical impairments who took part. Not including these barriers was an oversight but had they been rated highly little that could be done to address these issues in terms of making recommendations to policy and planning groups, other than to be aware that they may play a role.

Given the lack of appropriate guidelines for people with a physical impairment (Rimmer, Braddock et al., 1999)it is not surprising that lack of knowledge about what to do was the most commonly cited barrier amongst those with a physical impairment who were inactive. Both those with physical impairments and parent/carers cited more information as something that would enable disabled people to become more active.

In terms of how information/education sessions could be disseminated, in 2003 Hughes et al (2003) demonstrated the value in using peer educators to educate women with disabilities about health promoting behaviours. Although Hughes's study focused on

women and therefore the findings may not be applicable to a wider audience, it may be a potential strategy worth further investigation for increasing awareness amongst those with a physical impairment. NHS Greater Glasgow and NHS Argyll and Clyde developed a physical activity training pack called 'A Little Physical Activity Means a Lot' which is designed to enable professionals to educate people about the benefits of physical activity. Those wishing to use the pack can attend a 'train the trainers course' and a potential mechanism for establishing a peer education programme would be to have someone with a physical impairment attend the course and become a physical activity trainer. Although those attending the course are required to have a degree of physical activity knowledge before going on the course, if the disabled trainer did not have this a possible strategy would be to co-deliver the sessions to people with physical impairments with someone who had more specialist physical activity knowledge.

Current Provision

Lack of opportunities is often cited as a barrier to participation among disabled people and this was the main reason that in chapter 3 the 'adopt a lifestyle' pilot was established. Although in chapter 4 the critique of current provision in Glasgow suggests provision for those with physical impairments in Glasgow may have improved since the 'adopt a lifestyle' pilot, in this study individuals and parents/carers believe more is needed to ensure equity of opportunity. Additionally those opportunities that are currently available should be more widely promoted as many individuals and parents/carer seemed unsure about the provision within Glasgow.

What is needed to enable those with physical impairment to become more active

Ninety-five percent of the responding parents/carers and 97% of the responding individuals with a physical impairment indicated that more was needed to enable individuals with a physical impairment to become more active. Individuals with physical impairments cited suitable equipment, specific classes and better trained staff as their top 3 facilitators, which ties in well with some of the commonly experienced barriers which could be changed through policy and planning. Assistance with transport had the lowest number of responses from individuals with physical impairments despite transport being identified as the most common barrier and this requires further investigation in order to gain a clearer understanding of transport issues and how addressing them could benefit individuals in

terms of activity participation. In addition to more information, parents and carers commonly cited specific provision as something that would enable people to become more active, although this would need to be considered in line with the recommendations from the adopt a lifestyle evaluation and the recommendations with regards to increasing specific provision outlined in chapter 4.

Study design

The rationale behind constructing this study was sound. However, the tools used in this research were poorly constructed and in places flawed, meaning that although some degree of useful information was derived, the information was not as robust as it should have been. The inclusion of the questions from the Physical Activity and Disability survey (PADS) had limited benefits. The included questions enabled more in depth information about the types of activities people were involved in to be gathered but because it was not used in its entirety, conclusions could not be made as to the activeness of individuals. However it was felt that it was not appropriate to use it in its entirety, as it would have lengthened the questionnaire considerably which may have affected return rates.

The only methodology used in this study was the distribution of self-administered questionnaires. Questionnaires such as the ones used in this study one often fail to capture the essence of many of the issues raised, and although tick boxes make a questionnaire easier to complete, they do restrict the range of answers available and perhaps preempt people's thoughts. In agreement with the report published by sportscotland studies such as this one require both the use of questionnaires and qualitative interviews (Scot Porter Research and Marketing Ltd, 2001). Dual methodologies allow validation of the answers provided in the questionnaire and more in depth insight into the issues arising from the questionnaire. Whilst the views of parents and carers are important, it is worth remembering the limits of data relating to behaviours of the person they care for unless it is validated by the person they care for. It is recommended that future methodologies include surveying schools, leisure clubs and that ethical approval be gained from the NHS in order to link with physiotherapists and other NHS services and staff who may be in contact with disabled people in order to reach a wider audience.

Additionally this study had originally set out to explore the training needs of staff working in leisure facilities. Although this was not possible, lack of staff knowledge has been identified clearly as a barrier to participation for those with physical impairments and other disabled individuals within this study and also in other studies. (Rimmer et al., 2004). Given that it is relatively easy to address and that better trained staff was identified within this study as something that would enable those with a physical impairment to become more active, a study of the training needs of staff around disability and physical activity is recommended and should take place as a matter of priority.

Conclusion

The information surrounding physical activity and those with particular impairments is sparse and much more is research is needed in order to establish evidence from which interventions and recommendations can be made(Heath & Fentem, 1997). The purpose of this study was to gather some baseline information that might be useful to practitioners and planners in developing strategies to increase the levels of physical activity participation amongst adults with physical impairments.

Although the number of people participating in this study was relatively small and therefore the findings should be viewed with a degree of caution it appears that despite believing that there are benefits that they could derive, many individuals with physical impairments are not participating in physical activity and that often the main reasons for this are cost and lack of knowledge about what to do. Most had experienced barriers to participation, which could on the whole be addressed by those working within health and leisure such as lack of suitable equipment, lack of staff knowledge, poorly designed facilities and lack of own knowledge. Travel was also a commonly cited barrier but this again could to an extent be addressed through more diverse service provision. Very few people thought that disabled people had equity of opportunity to participate in physical activity within Glasgow and said that more was needed to enable them to become more active, namely better designed facilities, suitable equipment, better trained staff and specific opportunities. Although from analyzing the parent/carer questionnaires their behaviour and beliefs did not appear to be linked to the behaviour of the person they supported, those individuals with physical impairments who were active commonly cited parents/carers as being instrumental in them becoming involved and they may therefore have a significant role to play. In light of the data generated from this study the following are recommended as a way forward for those involved in health and leisure policy and planning.

Increase access to information/education

Those who were inactive most commonly cited lack of own knowledge about what to do as a key barrier to participation and both parents/carers and individuals felt that more information would be useful.

• Information and education should be appropriate for the audience and should highlight the benefits of physical activity as well as what to do, where to go and what is available. This information should be widely available and be disseminated in partnership with those in regular contact with those with physical impairments and those who support them.

• The feasibility of using peer educators for those with physical impairments should be investigated.

• Parents/carers, Gps, practice nurses, physiotherapists and others who may be in contact with those with physical impairments on a regular basis should be given educational inputs around the benefits of physical activity for the person they support.

Reduce the number of external barriers and promote facilitating factors

• Suitable equipment should be purchased for all facilities in Glasgow in line with the recommendations made in the previous chapters i.e. purchasing equipment that meets industry standards with regards to inclusiveness.

• Research should be carried out to establish the training needs of those who may deliver to those with physical impairments and other disabled individuals. In addition investigate how to address the perception amongst those with a physical impairment that staff have limited knowledge about physical activity for disabled people. Gym staff and those involved in physical activity delivery should be required to have some level of disability teaching qualification.

• Look at ways of addressing transport issues. Although travel was a common barrier, assistance with transport was not highly rates as something that would enable them to become more active, therefore it may be about ensuring sufficient provision of opportunities across the city or taking physical activity to individuals.

• Investigate the possibility of specific classes/opportunities for those with physical impairments in line with the recommendations produced in chapters 3 and 4 of this thesis.

- Given that several people indicated that they thought an exercise consultation would enable them to become more active, the Live Active Scheme should look to encourage referral for those with physical impairments through existing links to GPs, Practice Nurses and establishing links with those working specifically with individuals for example Multiple Sclerosis Units or within Community Disability Teams.

Chapter 6

Conclusions

The benefits of physical activity participation are well documented, however it is acknowledged that despite this, the vast majority of individuals in Scotland are insufficiently active to experience health gains. Although there is a need to increase physical activity participation generally, recent policy documents around physical activity have noted that specific work is needed to address the inequalities in participation that also exist within Scottish society.

Disabled people are one group who generally experience social exclusion and till fairly recently have been neglected in terms of health improvement interventions. Although the research is still considerably less well developed than amongst the general population, there is some evidence to suggest that disabled people can also benefit from physical activity participation. However, whilst the Disability Discrimination Act has gone some way to working toward a more equitable society for disabled people and tackling some of the injustices they have faced, the barriers for disabled people are far greater than for non disabled individuals often making participation in physical activity and other areas of life more difficult.

The purpose of this research was to explore ways in which physical opportunities for those living in Glasgow with a physical impairment could be increased. This was carried out through three separate studies, which within them tried to establish:

- What the current level of physical activity was amongst those with physical impairments living in Glasgow
- What barriers those with physical impairments in Glasgow faced in relation to physical activity
- What might enable those with physical impairments in Glasgow to become more active

Activity levels of those living in Glasgow with a physical impairment

Having looked at the findings of this research, it would certainly seem that its purpose was justified. Of those who took part in the questionnaire study, the vast majority of individuals

considered themselves generally inactive and the exercise histories of those in the 'adopt a lifestyle' pilot would suggest that a number of these individuals also were not participating regularly in activity. Although the numbers taking part in both these studies were relatively small, if the findings were generally reflective of the physically impaired population living in Glasgow then it would reiterate research findings from elsewhere suggesting there is a need to increase participation amongst those with physical impairments.

Barriers experienced by those with physical impairments and facilitators to participation

People did appear to be experiencing, and had experienced, barriers to physical activity participation the key ones being poorly designed facilities, transport, lack of suitable equipment and lack of own knowledge. Given that one of the keys to behaviour change is removing barriers for individuals it is important that these barriers which are external e.g. not attributable to the individuals be addressed.

The equipment issue was raised in the 'adopt a lifestyle' pilot. Inappropriate positioning of equipment, pieces that did not accommodate wheelchairs and the lack of an arm ergometer made it difficult for those taking part to utilise the offer of a gym induction. In England the Inclusive Fitness Initiative is working with gyms to ensure that they are inclusive for disabled and non-disabled people alike. They have produced a list of accredited equipment and recommend that a minimum of 6 different pieces are bought to enable disabled people to get an allover body workout. Whilst it is not to say that the equipment currently within Glasgow is inappropriate or could not be used, it would seem good practice to minimize barriers for individuals by referring to these standard and purchasing these pieces of equipment for each facility in Glasgow.

Although many individuals seemed to believe they could derive benefits of activity and indeed when knowledge was tested amongst those in the 'adopt a lifestyle' pilot many seemed knowledgeable about physical activity and the benefits it could bring, those answering the questionnaire identified that their own lack of knowledge about what to do was a barrier and both parents/carers and individuals themselves seemed a little unsure about what activities were available. Unfortunately as with other studies individuals with physical impairments in Glasgow did not seem to think that staff had much knowledge either about physical activity for disabled people and this too needs to be addressed. While

this study did seek to address training needs among staff it was not possible and therefore this should be pushed for, as trained staff are key to increasing the provision within Glasgow for this group of individuals.

Specific classes were highlighted, as something individuals felt would enable them to become more active. The 'adopt a lifestyle' pilot was an attempt to provide such a thing and seemed to be well received although as already mentioned equipment was one area that was felt would need to be addressed before it could be replicated. Individuals also said that they would have liked it to be provided in a variety of locations across the city and at various times and of those who didn't adhere to the 8 week programme individuals did say that they would have attended had it been closer to their home. Three years on the provision and available opportunities for those with physical impairments seems to have increased through the sports equalities programme, although it becomes fairly limited when examined by the geography of the provision, the timings and the frequency of the activities on offer. The feasibility of running more of this specific provision may not be cost effective and therefore whilst more trained staff would allow more specific provision, trained gym staff and aerobics teachers would enable those with physical impairments to participate within mainstream provision which may be economically more viable.

Whilst there are opportunities available to those with physical impairments to participate in physical activity, there are definite steps that can be taken by service providers, those in health promotion, disability organisations and planning to enable those with physical impairments to become more active and increase opportunities for them. From the findings of this research the following are suggestions as to how this could be achieved.

Information and Education

- Information materials should be developed outlining what opportunities are available for people with physical impairments and widely promoted to disabled people and parent/carers through disability organisations, parent/carer organisations, the NHS, schools, local authority leisure facilities and other community venues.
- The effectiveness of a peer education program around the benefits of physical activity should be investigated.

- Parents/carers, Gps, practice nurses, physiotherapists and others who may be in contact with those with physical impairments on a regular basis should be given educational inputs around the benefits of physical activity for the person they support. Links should be made into the Live Active Scheme where appropriate.

Staff Training

- A training needs assessment should be carried out and gaps in knowledge addressed. Frontline staff such as receptionists should be included in such research.

- Key staff providing advice on physical activity e.g. gym staff and aerobics teachers should be sent on training such as the YMCA course for professionals teaching exercise to disabled people. This could be a staged approach e.g. gym managers followed by other gym staff. There should be at least one member of gym staff and one aerobics teacher in every centre with a specific qualification for teaching to disabled users.
- Staff attending courses such as the YMCA exercise to music for disabled people or the gym qualification for working with disabled people should be given the opportunity to shadow other members of staff working with disabled people such as the sports equality team both during the course and after to better facilitate their learning.
- Opportunities for shared training and learning should be explored e.g. between physiotherapists and exercise referral staff.

Equipment

- Each facility should aim to have the minimum six pieces of equipment recommended by the Inclusive Fitness Initiative (IFI).
- When a new facility is developed or every time new equipment is purchased; IFI recommended equipment should be purchased as a matter of course.
- Consultation should be carried out with disabled users as to where and how equipment should be placed to make it accessible.

Provision

- The opportunities for those with physical impairments should be increased through a combination of specific classes and tailoring of the existing mcainstream provision. Increasing the number of trainod staff working within leisure services could increase capacity for this.
- A cost analysis should be done to see how many classes could be provided through the sports equalities programme and weighed against the costs and implications of making the current mainstream provision more accessible.

Future Research

- Chapter 5 should be used as the basis for a more robust study that investigates the issues raised in more depth.
- Any future research into the beliefs and behaviours of people with physical impairments should include dual methodologies such as questionnaires and focus groups.
- A wider range of organisations for example colleges, the NHS and social work should be targeted to recruit the study population.

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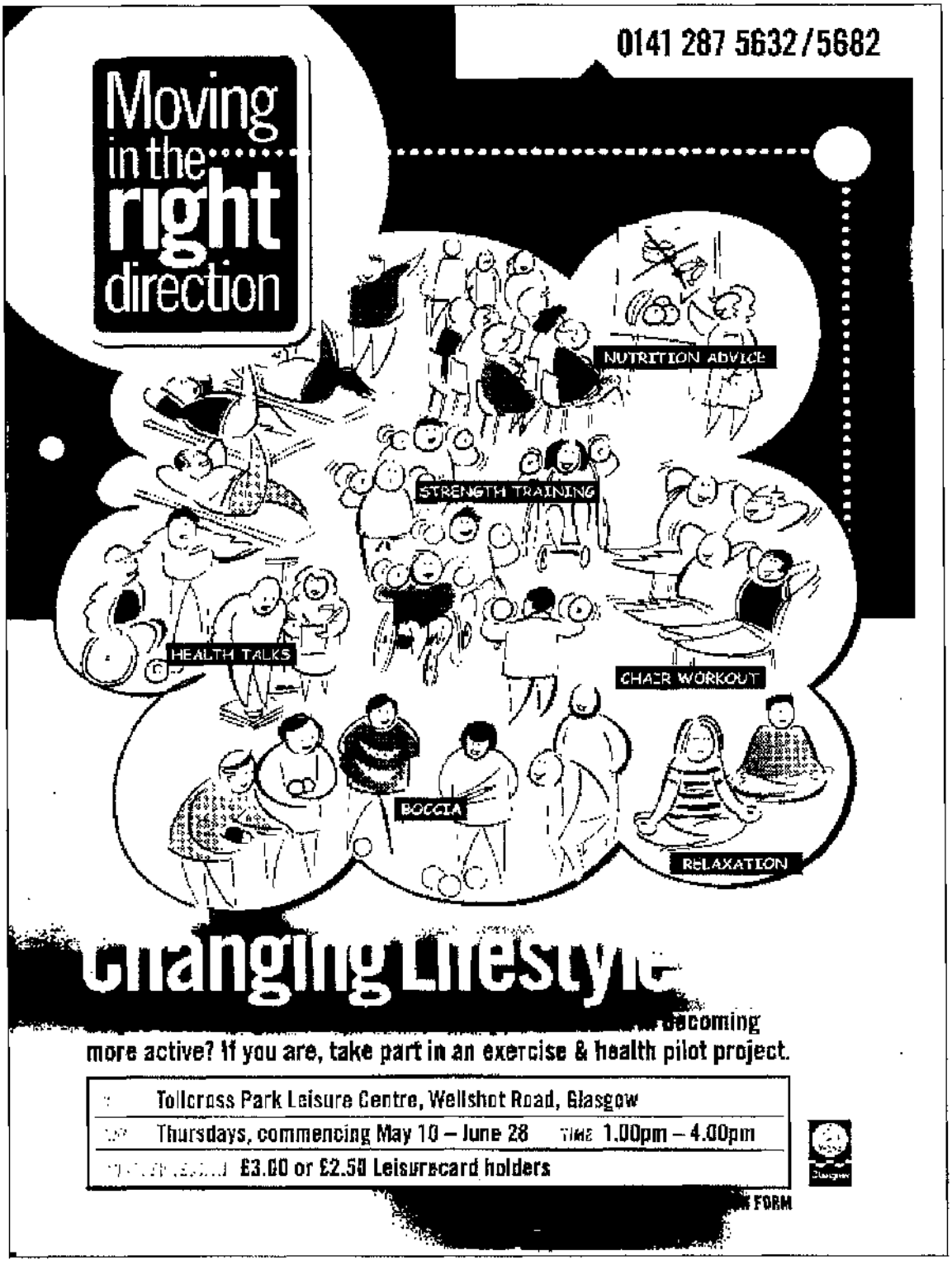
Appendices

APPENDIX 1 - Adopt a lifestyle flyer



Changing Lifestyles

An exercise & health pilot project for adults with a physical impairment

STARTS AT | TOLLCROSS PARK LEISURE CENTRE
Thursday 10 May 2001 1.00-4.00PM

Changing Lifestyles is a (Pilot) Exercise Project devised for adults with physical impairments, e.g. **Stroke, Multiple Sclerosis and Head Injuries.**

Provision has been established through the joint work of Cultural and Leisure Services, the Community Physical Disability Team, Glasgow Council for the Voluntary Sector Sports Unit and the Health Promotions Department.

The project comprises:

◆ A Physical Activity Exercise Programme ◆ Workshops on issues such as Healthy Eating

CHANGING LIFESTYLES APPLICATION FORM

If you are interested in taking part in this Pilot Exercise Project (which will run initially for an eight week period), please complete and return this Application Form by *27 April 2001* to Cultural and Leisure Services, 20 Trongate, Glasgow G1 5ES. FAO Fiona Macneil.

NAME _____

ADDRESS _____

_____

_____

TELEPHONE _____

I am interested in being involved in the Changing Lifestyles Exercise Project (May 10– June 28 2001). I would be glad if you would contact me with regard to becoming involved in this Pilot Exercise Project.

SIGNED _____ DATE _____

For further information contact Cultural and Leisure Services · 20 Trongate · Glasgow G1 5ES

TELEPHONE [illegible] 3082

Fax 0141 287 3558 - e-mail disabled.sport@cls.glasgow.gov.uk

Information is accurate at the time of printing

APPENDIX 2 - List of most common physical impairments

Most Common Physical Impairments:

Cerebal Palsy,

Spina Bifida,

Spinal Cord Injuries

Amputations,

Neurological conditions

Strokes

APPENDIX 3 - Letters of ethical approval

Ms Julie Craik,
Flat 5a Queen Elizabeth Gardens,
Clydebank,
Glasgow,
G81 3BX

UNIVERSITY of GLASGOW

21/06/04

Dear Ms Craik

FBLS Ethics Committee for Non Clinical Research Involving Human Subjects:
FBLS 0405 - Increasing Physical Activity Levels of disabled people in Glasgow

With regard to the above-named application which you recently submitted to the FBLS Ethics Committee for consideration, I am pleased to let you know that the Committee has given its approval without qualification. Please retain this letter as formal recognition of the approval.

Yours sincerely,

Dr Peggy Shelbourne
Depute Chair, FBLS Ethics Committee

Dr PF Shelbourne BSc PhD
Anderson College
University of Glasgow
G11 6NU

tel: 0141 330 6200
fax: 0141 330 4878
email: P.Shelbourne@bio.gla.ac.uk

Administrative Assistant:
Ms Deborah Madden
30th March 2001

UNIVERSITY
of
GLASGOW

Ms Julie T. Craik
Graduate Teaching Assistant
SRS
17 Oakfield Avenue

Dear Ms Craik

Ethics Committee for Non Clinical Research Involving Human Subjects

An evaluation of the "Adopt a life style" project

Thank you for your letter received today. Please note that the above submission was approved subject to the following points being addressed on the information sheet (the one which you give to participants), not on the University Ethics Committee pro forma:

(i) The word "pilot" be removed from the first paragraph;
(ii) The word "required" be replaced with "asked" in the third paragraph;
(iii) The spelling of the word anonymised be corrected in paragraph 5.

Please could you provide me with a copy of the amended information sheet as soon as possible.

Thank you

Yours sincerely

Clerk to the Ethics Committee

COURT OFFICE
University of Glasgow, Main Building, Glasgow G12 8QQ
Secretary of Court: Mr Dugald Mackie, *Direct Line:* 0141-330 4246
Academic Secretary: Miss Jan Hulme, *Ext* 4284/4102
Administrative Assistant: Ms Deborah Madden, *Ext* 5853/4120
Telephone: 0141-330 8855 *Fax:* 0141-330 4939 *Telex:* 777070 UNIGLA

APPENDIX 4 - PAR Q Form

Glasgow Council for the Voluntary Sector- Sports Unit

In conjunction with

Glasgow City Council- Culture and Leisure Services

Greater Glasgow Health Board & The Community Physical Disability Team

HEALTH SCREENING QUESTIONNAIRE

Please complete ALL questions in order to provide the coaches with information regarding your ability to exercise. All details are treated with the strictest of confidence.

What is your disability? _____

	YES	NO
Do you have a history of heart disease, angina or any other heart related disease? If yes please provide details _____	☐	☐
Do you suffer from high blood pressure? If yes please provide details _____	☐	☐
Do you suffer from any chest complaints e.g. bronchitis, Asthma, emphysema? If yes please provide details _____	☐	☐
Do you suffer from any muscle, joint or back disorder Which may be aggravated by physical exercise? If yes please provide details _____	☐	☐
Are you recovering from recent surgery (i.e. within the last 3 months)	☐	☐

If yes please provide details _____

Do you suffer from diabetes? ☐ ☐

Do you suffer from epilepsy ☐ ☐

Do you have any other physical limitations which may affect your ability to do some forms of exercise ☐ ☐

If yes please provide details _____

Are you currently taking medication? ☐ ☐

If yes please provide details _____

Are you pregnant or have you given birth to a child in the last 3 months? ☐ ☐

_____

If you have answered YES to any of the above questions or if you have not undertaken regular exercise in the past year, it is STRONGLY RECOMMENDED that you consult your doctor and obtain their professional opinion in writing of your suitability to participate in an exercise programme.

I declare that my participation in the exercise/physical activity classes for which I have complete the above questions is totally voluntary and I am aware that if I have answered YES to any of the questions I should seek medical advice.

Signed _____

Print name _____

Date _____

APPENIDX 5 - Participants information sheet

An evaluation of the 'Adopt a Lifestyle project'

Glasgow City Council in conjunction with Glasgow Council for the Voluntary sector (see footnote) have devised a project that aims to increase opportunities and access to physical activity and health education for people with physical disabilities.

In order to judge the success of the project the interagency planning group approached staff at the University of Glasgow to help in the organisation of the project and asked them to carry out research to evaluate the scheme and make recommendations to ensure its continuation.

We would like your help with this task and invite you to take part in our project.
Should you be interested in helping us with our evaluation you will be asked to fill in a variety of questionnaires and a record sheet telling us what you thought of the activities provided. At the end of the 10-week slot we may ask you to attend an interview asking for your views on the project.

At any point you are free to withdraw from the evaluation should you not wish to continue.

All information collected will be dealt with in the strictest confidence. All information, which you provide, will remain anonymous and details will not be passed on to any other organisation. Data may be used anonymously for research and teaching purposes.

Participation is entirely voluntary. If you should wish to work with us then I would be obliged if you could complete the consent form enclosed. Please feel free to contact me at any time with questions you may have.

I would like to thank you in advance for your help.

Yours sincerely

Julie L. Craik
Principal researcher
64 Oakfield Avenue
University of Glasgow
0141 3398855 extension 4027
e-mail J.Craik@admin.gla.ac.uk

Professor Nanette Mutrie
Project Supervisor
4 Lilybank Gardens
University of Glasgow
Telephone: 0141 357 7563
e-mail n.mutrie@bio.gla.ac.uk

Interagencies= Glasgow City Council, the Community Physical Disability Team, Greater Glasgow Primary Care Trust and the Greater Glasgow Health Board Health Promotions Department.

APPENDIX 6 - Participants consent form

Consent Form

I----------(PRINT)

Would/Would not(delete as appropriate)like to be included in the 'adopt a lifestyle' project evaluation.

I have been given the opportunity to ask questions and I am aware I am free to withdraw at any time.

Signed ----------

Date ----------

Address ----------

Telephone ----------

Please sign and complete this form.

Thank you for your support

APPENDIX 7 - Interview questions for multiagency group

Questions for multiagency group

- Could you briefly outline what your professional position is and what this role involves?
- Why did you feel there was a need for this pilot project?
- What do you feel are the main objectives of this project?
- How does this programme differ from services that are already available to those with physical disabilities?
- Could you briefly outline the processes by which this pilot project was developed and implemented?
- What difficulties if any have you incurred whilst trying to devise this project?
- Was there an inclusion/exclusion criteria for participation and if so how was this determined?
- After the initial 8 week period how would you like to see this project developing?
- Does your organisation contribute any money to this programme?
- If so do you consider it value for money compared to other programmes which your organisations supports?

APPENDIX 8 – Interview transcripts for multiagency group

Transcripts for members of various agencies

Code: MA1(Multiagency1)

Could you briefly outline what your professional position is and what this role involves?
My professional position, as a recreational supervisor?

Yeah
The sort of remit that I have is to set up programmes for people with disabilities within the city. Having worked in this area for quite a substantial number of years there has always been a lack of provision for disabled people who have a physical disability so that was really one reasons we started this programme in production with other agencies. Cause we knew this sort of project wasn't just for one agency, so it's a kind of..my professional role is to individually develop provision but also in conjunction with other agencies.

What do you feel are the main objectives of the project?
Main objectives are to give people who have a physical disability the opportunity to participate in an exercise programme. Also there is nothing there available for disabled people, with the main objective to establish that and to analyse for the future what kind of provision is indeed required.

This question may be a bit pointless if there isn't anything already set up but how does this programme differ from services already available to those with physical disabilities?
Em it differs because it is very much an interagency programme with the promotions, Glasgow Council for the Voluntary Sector, Physical Disability Team and Cultural and Leisure Services and this is the first programme that has been truly, broadly interagency, eh the programmes for people with physical disabilities presently, we work in partnership with Glasgow Council for the Voluntary Sector, so its good to have other partners who have clients who can be referred to these things.

Okay, could you briefly outline the processes by which the pilot project was developed and implemented?

Em I think initially it was recognised that there was a very great need for this kind of programme and it was really Jean Alexander from the Community Physical Disability Team who had eh ah spoken with us on a number of occasions and with Promotions on a number of occasions to establish this sort of provision in the city. We all realised that no one agency could do it on their own and that we would, require to work together, so what we did was we initially met and draughted up a proposal and outline of what was intended, what as required for example we knew that we would have to train new people to deliver this kind of programme and so we wanted to find some new training for them and em implement this…I've lost the question.

That's alright. What difficulties if any have you incurred whilst trying to devise this project?
Em lack of resources and time..eh there is a series of checklists that you have to go through, such as with the publicity for the programme, the design of all that and checking out that it was alright for each agency, that they were happy with that for example that took up a substantial amount of time and then the distribution of the publicity material and em what actually happened was a lot of it was distributed to people that we had on the database or that community physical disability had knowledge of and we worked through them but..again I forgot the question…was it processes?

No it was what difficulties might you have incurred.
Yeah I think that the main difficulty was that the information didn't go to as many people as it could have, if there had been more people involved in that distribution.

How far in advance of the closing date was the material given out?
Probably just a..a week at the most, although obviously we accepted late applications and we had a process within our publicity by which we deleted closing date.

In terms of cost, how much was it for the leaflets?
The leaflets…..probably about three-four hundred pounds altogether.

Where did the funding come from for the project?
Through the Cultural and Leisure services marketing

As a whole, for the whole project including staff training etc where did the funding come from?

Em Health promotions paid for the coaches

How much was that roughly?

Eh for each candidate it was in the region of about £220, there was tutors fees, probably you're talking about 14 times £220 that was paid by Health Promotions, you've also got facility hire and tutor coming up so his fee as well, I would estimate, though Kevin Lafferty would be able to tell you better, about two and a half thousand.

Emm was there an inclusion/exclusion criteria for participation?

Other than people with, we said, we always stated that the person we were targetting would have a physical disability and physical disability not including complex disability so yes there was a kind of I feel that or a recognition that this was a programme for adults with a physical disability. We have lots of other programmes for adults with learning disabilities, so this particular programme we identified as being for people with a physical disability and this is why we went to both the Community Physical Disability Team and Health Promotions because they are key partners because they do exercise prescriptions, its difficult for them to identify an exit route, so that again was part of all our remits to provide a service for these people.

How would you like to see the project developing?

I think that we would obviously listen to the participants comments, find out what's good what's bad, take on board aspects such as transportation and my gut feeling is that quite a lot of people might participate locally in a programme like that but to have to continue to travel across the city for it is costly in terms of transport, care and in terms of finance. I think my initial thought would be that it's slightly shorter programme consisting of an exercise element and a workshop element. It would be a sort of rolling circle of different workshops, that would be kind of blocked in 8 week blocks with some sort of maintenance programme as I think that's one of the most important things.

Okay thanks very much for your time.

Code: MA2 (Multiagency 2)

Could you briefly outline what your professional position is and what this role involves?
Okay no problem. My position is the Senior Health Promotion Officer for physical activity and that's a Glasgow wide remit so basically its looking to develop opportunities and try to increase participation in physical activity across the whole output of Glasgow. In a snap shot it's a combination of policy work and project based work actually work on the ground and trying to identify best practice or models of best practice .

Why did you feel there was a need for this pilot project?
I think obviously there was a gap, a gap in terms of service provision both in terms of mainstream facilities, a lack of people accessing those mainstream facilities by people who have a physical disability and I feel its an area that has not received the same level of attention in relation to the mainstream population so I think we should be trying to decrease the barriers and increase the opportunities for people with physical disabilities to use local facilities and take part in sport and exercise or physical activity.

So what do you think were the main objectives of the project?
Well probably a couple of main things were what the people themselves say, what would make it easier for people to access the facilities, is it because of the way they're set up is it because of the environment, is it because of the reception they receive, is it to do with cost, travel, want to find out what are the barriers for people and what would motivate people to become more active, is it because of the benefits physically, or is it social benefits, there's a number of benefits but rather than just guess or base it on what we already know to actually do that pilot or ask people themselves what are the issues. So its to actually inform what we try and do in the future and actually find out what people do want and what would help them or able them to become more active.

How does this programme differ form services that are already available to those with physical disabilities?
I think there is a difference because I think there's a couple of elements to the pilot programme and that's obviously there's an educational component to the project, there's a chance to be more social, there's opportunities to take part in a range of activities and for

people to have a choice there, generally it's a class or a number of set games which can be quite limiting for people, what we've tried to do is offer a range of activities and to offer a choice and actually find out what they want to do themselves so I think the most important thing is offering choice and then actually letting people direct it from what service there is and what we provide.

Could you briefly outline the processes by which this pilot was developed and implemented?

Okay well I think initially if I can remember that far back it was an initial idea that came from a number of people's thinking. Obviously there is a disability team over at Shettleston Health Centre who had a number of clients that they felt could benefit from being more active and obviously in a mainstream setting, getting people to access existing facilities and get away from being dependent upon a medical setting, so that's what some of the initial interest came. There was also interest from GCVS, the sports unit up there, interest through Cultural and Leisure who have a couple of staff members who have a remit for working in this area and Glasgow's Physical Activity Forum, where we had identified eh obviously physical people, people with a physical disability and learning difficulties as areas we'd prioritise and areas where threre is a need for more research and more provision but its provision where there is a demand, people are actually getting what they want, rather getting something put on that's not what people want and doesn't get used.

What difficulties if any have you incurred whilst trying to devise this project?

I think there has been a number of wee teething problems just with everything, I think obviously identifying research tools and everything, finding appropriate means of evaluating the pilot and obviously with the small numbers involved its hard in terms of validating what the pilots got to say. So I think it's the concentration of trying to use the qualitative stuff to actually tease out the issues, but knowing that it still gives you a hard case to argue to if you're taking this to a wider audience because it is RCT, it is a study but I think it gives us a feel for where we need to take action or further research or actually provision on the ground and what we're hoping to do is make sue that that's appropriate and that we've actually done a bit of consultation into what people want and its not just plucking it form the sky, we're actually trying to direct it and make sure its what people want.

In terms of cost how much did it sort of cost to fund the project?

There was a couple of elements of cost. There was obviously the training for the YMCA disability module that we put some of the staff on, obviously there was a couple of them involved in the pilot who attended the training. In terms of budget allocation I had put about two thousand two hundred towards that course, all be it not all of those monies were attached to the pilot because there were other people in the GP exercise referral scheme and external people on that course so I mean in terms o core cost you're looking between 2-3 thousand pounds, and I could get you an accurate figure if you want. In terms of my allocation of budget I've put in about £2200 and then obviously just my time and things in that sense. The other partners have covered staffing costs, some of the venue costs were being slightly subsidised and obviously from some of the budgets other officers have within Cultural and Leisure. So it has been done in partnership.

How does investment in this programme compare to other physical activity programmes?

I think it terms of other pilots we do its probably quite comparable, maybe a little bit more investment in terms of the initial training because there is probably a lack of appropriate training out there eh but there is a need for existing staff who work in mainstream settings to enhance their qualifications so that they feel more confident and that they actually do some of the qualifications that are industry recognised. So I think that's where there has been slightly increased costs but if I were to compare it to another pilot em its hard to say on that scale but I mean pilot project can range anywhere from £500 to £15000 or more so its I'd say in the lower bracket.

Okay thanks very much for your time

APPENDIX 9 – Participants questionnaire

Participants Questionnaire

Date _____

Please answer the following questions relating to the exercise session at Tollcross Leisure Centre by ticking the most appropriate box and including additional information where applicable.

Thank you very much for your time and co-operation

Exercise History

1) How many times a week were you exercising prior to this pilot project?

Didn't Exercise	☐	Once	☐
Twice	☐	More than twice	☐

1b) What types of exercise have you participated in previously? (Please specify)

_____

Exercise Sessions

1) Was the duration of each exercise session: (please tick one box)

Too long ☐ About right ☐ Too short ☐

If too long or too short, please say what duration would be better _____

2) Was one exercise session per week: (please tick one box)

About right ☐ Too few ☐

If too few, please say how many sessions you would have preferred

_____

3) Was the intensity of the exercise: (please tick one box)

Too hard ☐ About right ☐ Too easy ☐

4) Did you take advantage of the gym inductions that were on offer?

Yes ☐ No ☐

If not why? _____

5) Did you enjoy the resistance part (circuit exercises) of the exercise sessions? (please tick one box)

Very much ☐ Somewhat ☐ Not at all ☐

If somewhat or not at all, please say what could be improved

_____

6) What other activities might you have liked to participate in?

_____

7) Did you find the times of the exercise sessions suitable? (tick one box)

Very suitable ☐ Acceptable ☐ Unsuitable ☐

If unsuitable, please say which days of the week and or times of the day would you prefer_____

8) Did the exercise sessions take place in a comfortable environment?(please tick one box

Very comfortable ☐ Acceptable ☐ Uncomfortable ☐

If uncomfortable please state why _____

_____

9) Were the staff helpful? (please tick one box)

Very helpful ☐ Quite helpful ☐ Unhelpful ☐

10) Would you have liked your family or friends to join in the exercise sessions?

Yes ☐ No ☐

11) Are there any other areas you would have liked included in the programme?

Yes ☐ No ☐

If yes tick which of the following:

a) Advice on stopping smoking ☐

b) Stress management Techniques ☐

c) More information on the benefits of exercise ☐

d) Information on other health topics ☐

e) Other(please specify)----------

Travel

1) Was the travel time to the Sports Centre: (please tick one box)

Too long ☐ Acceptable ☐

2)Was it easy to get to the Sports Centre by public transport(if applicable)?

Easy ☐ Acceptable ☐ Difficult ☐

2a) If a transport system were available would you use it?

Yes ☐ No ☐

If yes where from----------

3) Was the cost of travel to the sports centre:

Too expensive ☐ Acceptable ☐ Less than thought ☐

Changes

1) Do you feel that your fitness has changed over the 8 week period? (please tick one box)

Increased ☐ No change ☐

Decreased ☐

2) Has your self confidence changed over the 8 week period? (please tick one box)

Increased ☐ No change ☐

Decreased ☐

3) Has your anxiety level changed over the 8 week period? (please tick one box)

More anxious ☐ No change ☐

Less anxious ☐

4) Do you intend to continue exercising over the next 6 months? (please tick one box)

Fully intend to ☐ Maybe intend to ☐

Do not intend to ☐

If you fully intend to continue exercising over the next 6 months, please disregard question 5

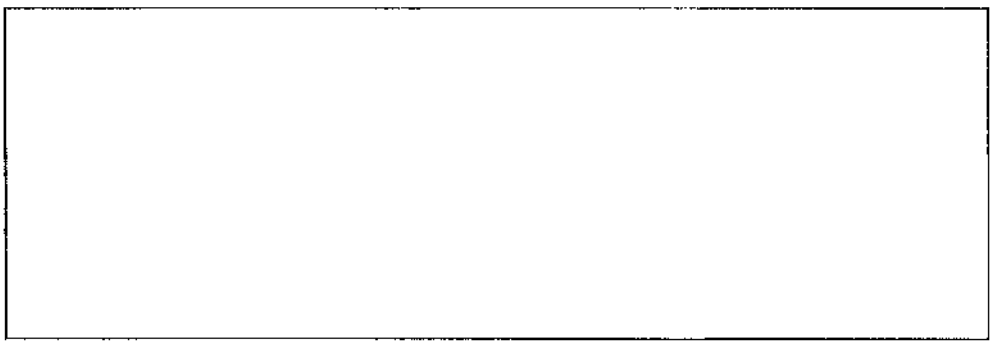
5) Do you think that a longer programme (i.e. longer than 8 weeks) would have made you more likely to continue exercising over the next 6 months? (please tick one box)

Yes ☐ No ☐

If yes how long should the programme be?

_____

Finally, please use the following space if you wish to make any further comments on any aspect of the exercise programme and return this questionnaire in the envelope provided. Thank you for your help in this evaluation.



APPENIDX 10 – Interview questions for participants

Participants Interview Questions

- How did you hear about the project?
- Have you enjoyed participating in the project?
- What benefits if any have you gained from participating in the sessions?
- What did you like /dislike about the sessions
- Did you find the workshops useful/informative
- What would you like to have seen more/less of?
- How did you find the exercise sessions?
- Did you experience any difficulties whilst performing the exercises?
- Did you experience any injuries/pain as a result of the exercises?
- What was your opinion of the staff involved in running the sessions?
- How easy did you find it to get to Tollcross?
- Did you think the sessions were value for money?
- In terms of access and services for people with disabilities how did you find the centre?
- If the sessions are to be continued, do you see your self participating in the future?

APPENDIX 11 – Interview transcripts for participants

Participants Transcripts

(P1= Participant 1)

How did you here about the project?

It was through my occupational therapist at Stobhill. I have been attending, em because of radial nerve damage.

Uh hu

So and she spoke to the GP exercise referral scheme

Right

And it all seems to have happened through that

Through GP referral

Yes this came up out of the blue so it must have been them who referred me

Okay so have you enjoyed participating?

Thoroughly enjoyed it

Thoroughly enjoyed it, feel free to tell me anything negative as well

No no as I said, the first day I came I felt as through I shouldn't have been here cause I said when I looked and everyone was in wheelchairs and It was only my arm that made me think, but very quickly as other people came in I realised what it was all about and I was ok.

So you have enjoyed it?

Yes I've enjoyed it. I think getting out, something to get out for, to get out of the house.

What sort of benefits if any do you thinks you have gained from participating?

Eh physical, well I do think I'm a wee but more, I've benefited from the exercise

Uh hu

Ever so slightly cause I think I should be doing more throughout the week not just the once a week, when I walked up the hill, I've got a hill when I come out of my street and I don't feel so out of breath, so obviously it must have helped in some way…em also socially and with my confidence.

Which area do you think it has improved the most? I mean is it more the confidence and social aspects or the physical?

I think it is more the social, although I certainly feel that a bit….exercise has done me but probably should be doing more throughout the week to gain maximum benefits from it. Probably the exercise doing in there..if tried doing in house throughout the week I would have gained more from it.

You went for a gym induction, did you feel it was useful?

Yes, it was last week so I haven't tried it yet

Do you think you will try it?

I think I'll give it a go

Are you comfortable going in now you have been round?

I think I am a wee bit more confident about going into it now. I've never been into gym in my life even before I had this so eh I think now I've seen around and I eh think that having someone you know has made a big difference showing you round and explaining and knowing your limitations.

Do you think that was useful?

Useful yeah

Do you think having a member of the project helped or do you think you would have been able to come in and book a consultation with a member of the centres staff?

No

No you don't think you would be able to do that?

No

Right

I think it certainly makes a big difference that you've got to know that staff. I think that's a big thing, for me personally because my confidence has gone completely since I've not been well.

Was there anything you liked/disliked about the sessions as a whole?

Well I've got to be honest I feel, the exercise class I felt like oh no never and there were times when I was ready to give up but you're encouraged to go on and that's fine. I'm not at all keen on the first half, the Boccia, that's me personally, I've not got great skills that way but as I say as the weeks have gone on I've kinda got more used to that as well.

Was it the length of the time or the activity itself?

Activity itself

Were there any other activities you would have liked to have done in that hour?

No as I say I can see the benefit of it and appreciate it but me personally just don't have any game scruff

Well you saw me try this afternoon!

Yeah you can have a laugh at it, you don't feel....., if I were doing that anywhere else I wouldn't want to do it.....if that makes sense to you

Yeah....the setting?

The setting does make a difference because I don't feel.....okay we have a laugh about it but you don't feel like you have to throw the ball straight of whatever. Whereas I feel any other classes you go to cause I've been to other classes before I had this even and I gave them up so I think that's a personal thing.

What did you think of the workshops that were carried out?

I think they were very useful. The relaxation and aromatherapy last week very good, giving you techniques. I've done things like that before, not aromatherapy but the relaxation...when I was working in adult education...but eh it just brought back to mind

and that's something I'm not good at just now and that helped making a difference....caring for all wellbeing.

Do you find yourself quite stressed?
Yeah it's terrible just now, but it helped me to switch off.

Do you think the relaxation helped with that?
Yes, cause you're too busy to think about what to do, co-ordinate your legs with your arms...but as I say you haven't time...your mind can't wander. I've been told to lose weight that's one thing I haven't done here, though I guess I should be doing more cause I haven't lost weight, it's the exact same as when I started....but that's obviously something I'm doing wrong and will need to work on.

It's not necessarily something you're doing wrong, just takes a little bit of time and maybe as you say the sessions aren't long enough or you need to do a bit more throughout the week. May if you start to use the CV equipment that will help

Is there anything you would like to have seen a bit more of or less of?
More time in the exercises and yet I don't know how that would work as I'm knackered after the hour.....don't know how to fit it in....maybe if I did some in the gym and then came to the talks.

How did you find the exercise sessions? Did you have any problems performing the exercises?
Yeah I can't hold the weights.....not that I can't hold them but I can't guarantee they'll still be in my hand due to radial nerve damage....but that was adapted and I like the idea of that. Weights with elastic round them.....that way you still got the resistance , but can't use the other ones.

Did you feel there were enough alternatives given?
Uh hu,.....thought that was good, adapted for everyone....all disabilities, given alternatives, tough basically the same exercises....thought that was really good.

Any other difficulties?

No just the hand weights, although one time my back was sore…em …but what…..the staff quickly identified the pain and that there was something wrong and I thought that was really spot on and gave me confidence…that they could recognise something was wrong and say to you to slow down….not stop completely but adapted that.

Adapted the exercise

Yeah

Did you experience any pain/injuries as a result of the exercise?

Some weeks yes. In my back, my arm and shoulder but I've got pain anyway and last week see my legs….but that's from not using them.

Did the pain stop you from doing normal activities or was it…..

The next day it eased off a bit.

Was it stiffness?

Yeah stiff, that may not have been from this….I was up early and had done some housework before I came out so I think maybe I had just done a bit much and it wasn't necessarily from in here…..I was off my head, I shouldn't have done housework as well.

Do you think you have enough information on stretching so that you are not sore afterwards?

Yes

What was your opinion of the staff?

Friendly. They made you feel quite at ease. That's quite important when you are coming along to something like this, no matter what your disability or whatever is. Able to have a laugh, able to at any point too much I could say to them and you didn't feel …..and I thought that was important. I really feel they were on top of what they were doing as I said they were able to identify when I wasn't right and sort it out.

How easy did you find it to get to Tollcross?
Well because of this I've lost my confidence in driving. I'm able but I've not got a car just now because of finance, I'm afraid, got my daughters car....my husband's been running me ever since, not very easy I have to say.

Where do you stay?
Muirhead. Near Cumbernauld, between Glasgow and Cumbernauld. No direct bus route, need to go into town. Personally I don't know, I 've only been on the bus twice since this and I fell....it would take me all day to get so I would say that's my biggest stumbling block.

Are there any other centres within Glasgow that are closer to you?
No not really

This one's closest to you.
There is one in Easterhouse but it's just as awkward to get to. It's not any easier. That's the one I've been referred to through GP exercise referral. I've got to go to that next Wednesday....she was going to come out here to see me today but I'm going there next week. I would say that's my biggest stumbling block for me and getting motivated to go out but I'm not finding that a chore....that I have a go. I look forward to going and I didn't think so in the beginning.

Do you think the sessions were value for money?
Definitely...no way you would get that anywhere

In terms of access and facilities for people with disabilities, how did you ding the centre?
Seems to be all right apart from the gym.....I heard some of the exercise things were upstairs.

Yeah we were talking about that
The doors sometimes for people in wheelchairs having to hold them open.

What about you have you experienced any difficulties?
I went into the disabled toilet and got stuck getting the door open. That's why I go to the other one now....I don't know if it is just me?

No no there is a problem with it
Yeah I couldn't pull it across but as I say it might just be me

No not at all

If all the sessions were to continue do you see yourself participating?
Yes I'd like to keep going

Is there any time that suits you better? Is 1 o'clock suitable?
Doesn't matter

Doesn't matter you'd attend regardless?
That's right at the moment, presuming that the car's there, my daughter got a new job, she's just graduated but it's in Glasgow and she 's going to take the bus anyway so I should have the care, short term anyway. Definitely looking forward to it.

One last question. How did you find the questionnaire?
All right

Feel free to say whatever
No, they were okay. I liked the idea that they didn't require much writing because for me writing can be a nightmare.

Anything else you'd like to mention
No, I don't think so Julie
Okay. Thank you for your time.

Interview 2 (P2)

How did you find out about the project?

Actually found out through....I attend Fernand Street complex two days a week but its an early day service in the mornings, we just popped in and saw the poster. I thought it would be quite good and asked for some more information, unfortunately they couldn't give any posters away, they didn't have any. As I say we were just going for a walk in the part and popped in and just saw it by accident.

Do you think that if you'd had posters you might have been able to get more people interested?

Eh yeah possibly

Have you enjoyed participating?

Yip

What benefits if any do you think you have gained?

Em meeting new people and friends. Having time on my own. Fills up the afternoon...its been good.

What have you liked/disliked about the sessions

Nothing I disliked. I liked the talks.

You enjoyed the educational talks

Yeah

Do you feel they were of benefit?

Yes somethings you know, somethings you know nothing at all.

Which particular talks did you find beneficial

Don't know possibly the stress management. Nutrition talks were a good reminder but mainly common sense.

Do you feel stressed?

Eh don't know if stressed but you just go through your routine and forget about relaxing and that is an important part of life as well....or it should be....to take time out, relax and do nothing really.

What would you have liked to have seen more of or less of?

Eh nothing really. I think sometimes it goes quite quickly, you are just getting into your stride and then away. Other than that quite happy.

How did you find the exercise session?

Do you mean the dance class?

Yes

Quite good I've done a lot of that before at the health centre with Capability Scotland. Quite good fun. Using muscles you don't normally think of moving, getting motivated and training the brain to exercise. It's like driving, you have to retrain the palate....it's the same with exercise. Easier to do in this setting....in a class environment.

Did you experience any difficulties whilst doing the exercise?

No not really, perhaps with one side being weaker than the other.

Did you experience any pain or injuries?

No, anything I couldn't manage, I just didn't do. I did all upper body work.

Now feel free to answer as bluntly as you like but how did you find the staff?

Very friendly...just getting to know them and now there is a break. Very nice. Very informal.

How easy did you find it to get to Tollcross?

Very easy. Only 5-10 minutes. Get a taxi or walk. It was easy for myself but it would depend on where you live whether it's difficult or not.

In terms of access and services, how did you find the centre?
Okay. I think most people would find the disabled toilet ver very stiff. I said to the manager and for some reason they said that for fire regulations it has to be that heavy, but there is no way I could open it. Now I just use the toilets in the swimming pool which are easier to access.

Yeah a lot of people have had problems with the toilet.
It's really heavy, one of the staff attendants heard me shouting, as I couldn't even bang on the door. He got the centre manager who explained that cause of fire regulations that stipulate the door has to be that heavy. He said he'd put a smoother runner on it but whether he has I don't know but that the only problem.

Would you be interested in using the gym?
Depends on the apparatus, cause all my strength is in my arms. Certainly be interested, I've used weights before.

What about CV equipment?
I can't manage that cause I can't stand

You can get the arm cranking machines. Would they be of interest?
Oh yes definitely

Do you think the sessions were value for money?
Yes especially with the passport card.....even without it.

If the sessions were continued would you participate?
Yes definitely

How did you find the questionnaires that were handed out?
Kind of repetitive

Any other views you would like to share?
No quite happy Okay thanks for your help

Interview 3 (P3)

How did you hear about the project?
I attend physical at the Nuffield every 2 weeks and she suggested that I attend here

Have you enjoyed participating?
Found it very tiring, the thing is that I wish it was going on all the time. I feel like all the effort I put into the exercise has been wasted because I am not able to come to the class during the summer. I don't know after that ....it's so far to come..I'd like to go to an exercise class like this but near me.

You are from Knightswood aren't you?
Bit nearer than that.....Partick

So where is the nearest centre to you?
Kelvinhall

Kelvinhall or Scotstoun
Yes or Scotstoun

If the classes were available in centres closer to you would you attend?
Yes I would....if they were for disabled people

What benefits if any do you think that you have gained?
Well I like being with disabled people. I'm quite paranoid about people looking at me, so it's refreshing to be with other people who might feel the same....I don't know I haven't talked to anyone about that, but I know with my own disability we have meetings and people feel the exact same as me. When you are walking along the road and you can't walk properly people coming towards you , you just shy away or feel awkward and some other people do feel that.

Do you think then that you have gained more confidence?
A wee bit perhaps

Any other benefits?

Sight of the swimming pool made me interested in swimming again. I've filled in an application form for Scotstoun. It looks like something out of the Mediterranean with the water lapping on the shore and has renewed my interest.

What have you liked/disliked about the sessions?

Not sure, the whole place has meant quite a lot to me. Like I was saying about the swimming pool, it was just beautiful, very struck with the place. I've been asking if Scotstoun is like it and I'm interested in what places like this have to offer in terms of exercise. So it has made me interested in that.

The sessions we've had like Boccia and....

I like that. I told you that I was terribly competitive, my face has been terribly competitive.

So you enjoyed the games?

Yes

What about the exercise?

Too much, exhausting, utterly exhausting.

Uh hu

Shows how weak I have become. I used to dance and be able to dance for ages and ages and now I get all muddles up with my arms and legs.

Do you think that exercise has helped any?

Hasn't been for long enough or frequent enough.

You don't feel that once a week is enough?

That's what I wonder

Have you experienced any difficulties whilst performing any of the exercises?

Uncorodinated. No apart from being tired. I can't think of anything else. Just weary. Do you remember least week you said to someone knackered?

I said to you that you were knackered?
No you said it to one of the other instructors. They came over to see how I was doing and you replied knackered.

What was your opinion of the staff?
(Instructor 1) bit of a muffin you can't tell what he's thinking. (Instructor 2) is friendly all the time. (Instructor 1) comes and goes, sometimes friendly, nice as others but can't tell what is going on in his head. Big guy in there
Instructor 3?
Yeah first time I don't know if why maybe because I wasn't feeling much confidence. This big giant I was petrified.

Did you feel that the sessions were value for money?
Oh yes absolutely, pity I had to pay £20 for my taxi.

In terms of access and facilities in the building, how did you find it to get about?
Learned to get about

Is there anything the centre could have done to make it easier for you?
For me, I'm pretty much the same as anyone else.

If the sessions were to be continues do you see yourself continuing?
Not way over here, but if you had one at Scotstoun

How did you find the questionnaires that were handed out?
Alright not that bad. I know one was personal, one factual. I may have something wrong....maybe not.

Is there anything else you would like to say?
I think it has been a very good idea and thank you very much.

Interview 4 (P4)
So how did you hear about the project?
It was Iain who told me

Iain is your carer?

Yeah

Have you enjoyed participating?

Yeah

What benefits do you think you have gained from participating?

A lot if it getting out, getting out of bed

Getting out of bed

Yeah

How have you found the sessions? Have you enjoyed them?

Yeah

What would you like to see more of/less of

More exercise

More of the third class we do?

Yeah

Did you enjoy that?

Yeah enjoy to do that again

Anything you would like less of?

No

How did you find the talks that we did?

I found them alright

Were they useful?

They were quite good

Was there any that you found particularly useful?
The diet, you know the eating one, cause I'm a diabetic.

So you found that useful
Yeah telling me what to eat and what to keep away from kinda thing

When you were doing the exercise sessions did you experience any difficulties performing the exercises?
No

Any injuries or pain?
No

How easy did you find it to get to the centre?
Got a car so it's easy.

In terms of cost, do you think the sessions were value for money?
Alright

In terms of access, how easy was it to get around the centre?
Okay for people in wheelchairs

Did you use the gym?
No not used it cause the only thing I could use, the recumbent cycle was upstairs which wasn't good.

How were the staff?
Good, very helpful

Anything else you would like to say
Nothing that I can think about.

Do you intend to come to the classes over the summer?Yeah

Interview 5 (P5)

How did you find out about the session

Instructor 1 and Instructor 2 told me about it

So through GCVS

Aye

So how have you found it?

Found it good, it keeps you going, gives you something to do

How did you find the sessions that we did?

I liked the exercise to music class

You liked the class we did to music?

Aye

What benefits if any do you think you have gained from coming over the past eight weeks?

Make you more getting to know people more than anything else. Helps that way.

Have you got any physical benefits from coming

Go swimming and that anyway

So you are active anyway?

Aye

Is there anything you would have liked to have seen more of or less of?

No I think the times were about right

Was there anything you disliked about the sessions

Nup

The workshops that we did how did you find those?

Yeah

Which ones did you like the best?
The woman one

Was that the food one or the relaxation one?
The food one

The food one
Yeah

How easy did you find it to get to Tollcross?
Getting a taxi here and back

And do you have to pay for the taxi?
No it's on account anyway

On account anyway
Yeah

What did you think about the price of the classes? Did you feel they were value for money?
Yeah

Okay if we were to continue the classes would you continue to come?
Yeah

When you were doing the classes did you experience any problems?
No

Any injuries or pain?
No

How did you ding the questionnaire that were handed out?
Quite easy. Can I get one to take away?

A questionnaire?

Yeah to practice

Yes no problem, you can have a questionnaire to practice

Is there anything else you'd like to say about the project?

No. Can I listen to that

Yes of course you can and thank you for your help

APPENDIX 12 – Interview questions for instructors

Instructors Interview Questions

- Did you enjoy participating in this project?
- What do you feel are the main objectives of the programme
- What were your views on the training that you received prior to the project?
- Do you feel that it prepared you sufficiently to teach to the participants?
- What difficulties if any did you experience in preparing for each session

  .....during each session

  ..... after your sessions?
- What feedback, if any, did you receive from participants?
- Did you at any point have concerns regarding safety either yours or the participants?
- Was there anything that could have been done to make your teaching either easier or better too leading let them tell you
- What improvements if any would you like to see if this project were to continue?
- Do you feel that the project was worthwhile and what benefits do you think the participants experienced?

APPENDIX 13 – Interview transcripts for instructors

Instructors Transcripts

Code: I1 (Instructor 1)

What do you feel were the main objectives of the programme?

To provide healthy lifestyles. To make adults with physical disabilities aware of what facilities, what Tollcross Leisure centre has to offer. To try and get adults to come along and improve their quality of life.

What were your views on the training that you received prior to the project? Do you feel that it prepared you sufficiently to teach the participants?

Well having worked in the field of physical disabilities for fifteen years, I had and my staff had good experience but I thought that the YMCA course was enjoyable. It freshened up your ideas a bit so I think it was an excellent course for people going prior to the class.

For people who haven't any experience do you think it was sufficient?

No, not a three day course. You need to pick it up from working with disabled adults constantly, you were on the course yourself , certainly opened up their eyes and we could see that eh but the fact that quite a lot of people failed it proves that it wasn't sufficient.

What difficulties if any did you experience in preparing for each session?

At Tollcross?

Aye

Not really, centre was okay, staff okay, we got things set up in time. Maybe the first week, way it was organised, we could have organised it better, made sure we had all the forms, all the coaches went over all the stuff prior to starting. First week we just sort of went in and did it. We could certainly have looked at that but the facilities and that were fine.

Did you have any difficulties during the sessions?

Myself personally no but I know there was a complaint from one of the women on board, but having spoken to her myself , no matter what you'd have done for her she wouldn't

have been happy. In this day and age there is always one person who won't be happy with what you provide, so obviously there are problems with that.

What feedback, if any did you receive from the participants?
Feedback I got was that the last class was the one that the liked the best, the exercise class. Feedback was that some of the problems were the travelling and things, costing a lot, so if we could set up in other areas that would be ideal for them.I think the ones that have been coming were definitely on bored. They certainly enjoyed it , enjoyed the talks about the, eh, all the talks about the nutrition and relaxation. I do think they have benefited from that, they've said that and I think that if they provided it five days a week nearer their homes then they'd come five days a week so it's certainly worthwhile.

Excellent. Did you at any point have concerns regarding the safety either yours or the participants ?
Nup. Being quite honest, no. Where some of them did want to go into the gym and the exercise wasn't appropriate because of the equipment, we did have to say no to those folk. So in that respect all under control. We said to the centre manager about moving equipment, which still hasn't been done so eh no there wasn't any health and safety issues.

Was there anything that could have been done to make your teaching either easier or better?
Was there anything that could have been done to make your teaching either easier or better. That's a good question. When doing the circuit class, could have taken more time finding out each individuals own goals, eh we do the class together but you could break it right down to each individual and what they want to get out of it i.e strength training or CV training. Break it right down but cause of the nature of the class don't really do that....something we could look at.

Was there anything that could have been done in terms of equipment or…
Certainly if we had specialised equipment we could do so much more for all the adults and we spoke about that. Certainly the gym's not appropriate so if we got in specialised equipment we would open up loads of doors for loads of people.

What improvements if any would you like to see if the project were to continue?
Improvements would be if you could set it up in different areas in Glasgow, it's going to reduce some barriers for certainly some of the adults who come to our class, get more numbers coming along. Eh again if you had specialised equipment,em the amount of people that came on the first day, if we had specialised equipment we could get them all into the gym and that's when it will be hugely advantageous to everyone concerned. Eh I know we've had talks like that and we'll have discussions about that in the future. Emm right

Do you feel that the project was worthwhile and what benefits if any do you think the participants have experienced?
Yip definitely worthwhile, eh just a pity we didn't get higher numbers.The benefits they've exeperienced is that they have been made aware of what they need to do to improve their lifestyle, their health and fitness, em doing the talks as well as the exercise has certainly opened up some of their eating habits and the exercise broken down into like how many times a week and things like that. I'm sure going by the questionnaires they got stuff wrong at first but get right now so I definitely think that they've learned things.

Excellent. Is there anything else you'd like to comment on?
Anything else I'd like to comment on. Emm it has been a worthwhile project, just a few wee hitches and things. Emm I just think if it's organised properly and targeted properly it could be set up all over Glasgow, the money is going to be a big issue, getting specialised equipment in for example an integrated centre but I think that's quite far down the line. I think these are issues that will be discussed

Okay thank you very much
No problem

Code: I2 (Instructor 2)

What do you feel were the main objectives of the programme?
To try and get people with physical disabilities into physical activity and get them active.

Okay, what were your views on the training you received prior to the project? Do you feel it prepared you sufficiently to teach the participants?
I didn't actually attend the YMCA course but having spent many years working with people with disabilities, felt I was more than sufficiently trained.

What difficulties if any did you experience in preparing for each session?
Possibly the different levels of disability. Quite a range of disabilities in there which was sometimes quite hard.

Were there any difficulties you experienced during each session
No

And after your sessions
No

What feedback if any did you receive from the participants?
Most of them said they really enjoyed it. Some of the more able-bodied participants felt that it was a bit too easy for them cause there was a lot of wheelchairs there so eh mainly though they thoroughly enjoyed it and wanted it to be continued.

Did you at any point have concerns regarding your safety or that of the participants?
No

Was there anything that could have been done to make your teaching either easier or better?
They could have taken a bit more time to look at the clients and work out the range of disabilities

What improvements if any would you like to see if the project were to continue?
I would like to see the first hour session continue rather than just focus on the fitness. I'd like to see the gym side of it improved, get most people into the gym

Do you think the project was worthwhile and what benefits do you think the participants experienced?
Oh it was definitely worthwhile. Benefits they experienced were in their fitness, you could see improvements in their fitness

Okay thank you very much

APPENDIX 14 – Non participants telephone interview questionnaire

Non Participants Telephone Interview Questionnaire

Travel

1) How easy was it for you to get to Tollcross leisure centre

Very Easy ☐ Relatively easy ☐ Not easy at all ☐

2) Did the inconvenience of travel ie time, public transport prevent you from attending the programme?

Yes ☐ No ☐

3) Did the cost of travel prevent you from attending?

Yes ☐ No ☐

4) Would you have attended if a transport system had been available to you?

Yes ☐ No ☐

If so where from

5) Would you have been willing to pay for this service?

Yes ☐ No ☐

Tollcross Leisure Centre

1) Were you put off by the sports centre environment?

Yes ☐ No ☐

If yes why

2) In terms of access how easy did you find it to get around the centre?

Easy ☐ Reasonably easy ☐

Difficult ☐

If difficult why?

Exercise Programme

1) Did you enjoy the activities that were on offer?

Yes ☐ No ☐

If not what activities might you have liked?

2) Were the times of the exercise class suitable?

Very suitable ☐ Acceptable ☐ Unsuitable ☐

3) Was the duration of the sessions

Too long ☐ About Right ☐ Too short ☐

4) Would you have attended if family and friends could have joined in?

Yes ☐ No ☐

5) Is there anything we could have done to make the sessions better for you?

6) Would you be interested in coming along if the project were to be run again?

APPENDIX 15 – Exercise knowledge questionnaire

Test how much you know about how physical activity affects your heart. Mark each question true or false.

[redacted]	True	False
Regular physical activity can reduce your chances of getting heart disease.	T	F
Most people get enough physical activity from their normal daily routine.	T	F
You don t have to train like a marathon runner to become more physically fit.	T	F
Exercise programs do not require a lot of time to be very effective.	T	F
People who need to lose some weight are the only ones who will benefit from regular physical activity.	T	F
All exercises give you the same benefits.	T	F
The older you are, the less active you need to be.	T	F
It doesn't take a lot of money or expensive equipment to become physically fit.	T	F
There are many risks and injuries that can occur with exercise.	T	F
You should always consult a doctor before starting a physical activity program.	T	F
People who have had a heart attack should not start any physical activity program.	T	F
To help stay physically active, include a variety of activities.	T	F

APPENDIX 16 – Phyiscal self perception profile

The Physical Self Perception Profile

WHAT AM I LIKE?

These are statements, which allow people to describe themselves. There are no right or wrong answers as people differ a lot.

First, decide which of these two statements best describes you

Then, go for that side of the statement and decide if it is sort of true or really true FOR YOU

REALLY TRUE FOR ME	SORT OF TRUE FOR ME		BUT		SORT OF TRUE FOR ME	REALLY TRUE FOR ME
		Some people feel extremely proud of who they are and what they can do physically		Others are not quite so proud of who they are physically		
		Some people are sometimes not so happy with the way they are or what they can do physically		Others always feel happy about the kind of person they are physically		
		When it comes to the physical side of themselves some people don't feel very confident		Others seem to have a real sense of confidence in the physical side of themselves		
		Some people always have a really positive feeling about the physical sideof themselves		Others sometimes do not feel positive about the physical side of themselves		

		Some people wish they could have more respect for their physical selves		Others always have great respect for their physical selves		
		Some people feel extremely satisfied with the kind of person they are physically		Others sometimes feel a little dissatisfied with their physical selves		

APPENDIX 17 – Adopt a lifestyle followup letter and questionnaire

Social and Public Health Sciences Unit
University of Glasgow
4 Lilybank Gardens
Glasgow
Date

Adopt a Lifestyle Followup
Physical activity programme for individuals with a physical impairment/disability

Dear Friend,

Several years ago you attended a pilot project called 'Adopt a Lifestyle' at Tollcross Leisure Centre. The project looked to increase opportunities for individuals with physical impairments/disabilities to participate in physical activity and I was responsible for evaluating the project. You may remember I spoke to you at the end of the pilot to find out what you thought about the project and whether you had thought it was worthwhile or not.

As part of my studies for University I am interested in contacting those who came along to Tollcross Leisure centre for the pilot to find out:

- If they are still doing some type of physical activity.
- What type of activity they are doing.
- How often they are participating in physical activity.
- Where they are doing their physical activity.
- Why they may have stopped.

As you were one of the people who came to Tollcross regularly for this project I would like it if you or in conjunction with a support worker or someone else you could take the time to fill in this short questionnaire to help me with my studies. It should take approximately 10 minutes to complete.

All information collected will be dealt with in the strictest of confidence. All information provided would remain anonymous and details will not be passed onto any other organisation. Data may be used anonymously for research and teaching purposes.

Participation is entirely voluntary and whilst it would be helpful if you and/or your support worker could take the time to complete the enclosed questionnaire, you do not have to do so. If you have any questions or concerns, please feel free to contact my supervisor or myself using the contact details below.

I have enclosed a prepaid envelope that can be used to return the questionnaire if you decide you would like to complete it. Returning the questionnaire will be taken as you consenting to the information being used for this research. Questionnaire should be returned no later than (Date to be added). If I do not hear from you within this timeframe I will send you one reminder. If you are not wishing to take part in the study, you do not have to do anything and you should ignore the reminder. If you do not respond I will assume that you do not wish to take part and I will not contact you again.

I would like to thank you in advance for your help
Yours Sincerely

Julie L. Craik
Principal Researcher
4 Lilybank Gardens
University of Glasgow
Email:j.craik1@ntlworld.com

Professor Nanette Mutrie
Project Supervisor
4 Lilybank Gardens
University of Glasgow
Telephone 0141 357 7563
email:n.mutrie@bio.gla.ac.u

Participants Follow-Up Questionnaire

'Adopt a Lifestyle'

Returning this questionnaire means you are consenting to the information being used for the purpose of this research. The questionnaire should take approximately 5-10 minutes to complete. The questionnaire has two sections. There are 7 questions in section A and 6 in section B. After the first question you will be required either to continue with section A or to go to section B. You **do not** have to complete both sections. All information will remain annonymous and confidential.

SECTION A

Q1) Since the 'Adopt a Lifestyle Project' have you continued to do some type of physical activity?

Yes ☐ **Answer section A only**

No ☐ **Go to section B (page 4)**

Q2) What type of physical activity do you do? (tick all those that apply)

Swimming ☐

Water aerobics ☐

Aerobics ☐

Boccia ☐

Gym (Cardiovascular machines + weights) ☐

Other ☐

Please specify _____

Q3) How often do you take part in physical activity?

Once a month or less ☐

Once a week ☐

2-3 times a week ☐

3-5 times a week ☐

More than 5 times a week ☐

Q4) Where do you go to take part in physical activity? (Please specify)

_____

_____

Q5) Do you think there should be more opportunities for disabled people to do physical activity?

Yes ☐ No ☐

Q6) Do you think more needs to be done in order to make it easier for people with physical impairments to become more active?

Yes ☐ **Answer 6b**

No ☐ **Go to question 7**

Q6b)Which of the following would help people with physical impairments become more active? (Tick all that apply)

Equipment suitable for those with physical impairments within leisure facilities ☐

Better trained staff ☐

More information available to individuals and parents/carers/support workers about the benefits ☐

More projects like the 'Adopt a Lifestyle' class ☐

Assistance with transport ☐

Reduced costs for physical activity ☐

Exercise consultation (one to one advice on physical activity with a trained exercise counsellor) ☐

None of the above ☐

Other (please specify) ☐

_____

Q7) Did the 'Adopt a Lifestyle' project help you to become more active?

YES ☐ NO ☐

THANK YOU FOR YOUR HELP

Please return the questionnaire using the prepaid envelope by the (Date). Thank you once again

SECTION B

Q1) How soon after the 'adopt a lifestyle' project ended did you stop doing physical activity? (please tick)

Straight away ☐

After about a month ☐

3-6 months after ☐

6-12 months after ☐

Can not remember ☐

Q2) Why did you stop doing physical activity? (Please tick all that apply)

There were no opportunities once the class ended ☐

I lost interest ☐

Transport to other centres/classes was too difficult ☐

Cost of doing activity was too much ☐

My parent/carer was unable to take me ☐

Medical reasons ☐

Other (please specify) ☐

_____

_____

Q3) Would you be interested in becoming more active again?

Yes ☐ No ☐

Q4) Do you think there should be more opportunities for disabled people to do physical activity?

Yes ☐ _____

No ☐ _____

Q5) Do you think more needs to be done in order to make it easier for people with physical impairments to become more active?

Yes ☐ **Answer 5b**

No ☐ **Go to question 6**

Q5b)Which of the following would help people with physical impairments become more active? (Tick all that apply)

Equipment suitable for those with physical impairments within leisure facilities ☐

Better trained staff ☐

More information available to individuals and parents/carers/support workers about the benefits ☐

More projects like the 'Adopt a Lifestyle' class ☐

Assistance with transport ☐

Reduced costs for physical activity ☐

Exercise consultation (one to one advice on physical activity with a trained exercise counsellor) ☐

None of the above ☐

Other (please specify) ☐

Q6) Did the 'Adopt a Lifestyle' project help you to become more active?

Yes ☐ No ☐

THANK YOU FOR YOUR HELP

Please return the questionnaire using the prepaid envelope by the (Date). Thank you once again

APPENDIX 18 - Inclusive fitness initiative interim fitness equipment standards

Inclusive Fitness Initiative

Interim Fitness Equipment Standards

1st June 2003 – 31st March 2006

(taken from www.inclusivefitness.org)

General Requirements

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Clear tonal contrasts to indicate moving parts and different functional components of the design			✓		✓
Clear colour contrast between the frame and upholstery			✓		
Obvious raised iconography, colour and texture on emergency stop	✓	✓	✓	✓	✓
Quick start function	✓	✓		✓	✓
Tactile grips	✓				

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
High handles and bars easy to change from a seated position		✓			
Equipment to meet EN 957 European Standard for Stationary Training Equipment	✓	✓	✓	✓	✓
Accessible and usable by non-disabled people					

General Requirements

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Choice of frame colour available			✓		
Choice of upholstery colour available			✓		
Continuity of design detailing and product characteristics throughout the range			✓		✓
Pictorial messages (visible and audible)					✓
Adjustable handles to assist use by people	✓				

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
with a wide range of back and arm lengths					
Adjustable gripping angle to reduce the strain on the wrist	✓				
Easy to grasp pin and adjustment mechanisms to aid independent use by people with limited or no finger function	✓				
User able to independently set the range of motion with one hand	✓				
Range of motion adjustments centrally mounted	✓				
Bilateral and unilateral limb activity available	✓	✓			
Seat suitable for wheelchair transfer including: Height adjustment that is able to be operated from seated		✓			
Side handles		✓			

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Wide base		✓			
Supportive foam		✓			
Seat padding to: Provide support in the form of ergonomic moulding		✓			
Provide reasonable protection for users with sensitive skin in short to medium term use (lower density, softer foam to help reduce movement and shearing)		✓			
Adjustable to ensure appropriate body alignment and support		✓			

Consoles

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Centrally located emergency stop or emergency stops located on both the left and right hand sides of the equipment or kill cord or similar 'hands free' mechanism	✓	✓	✓		✓
Raised obvious iconography (pictures, images, logos) and, or raised digits, and or raised buttons on console for main controls (start/stop, up/down, increase/decrease speed) with clear colour contrast (The raised digits should not be Braille. If Braille is to be added this should be along side the raised digits)			✓		✓

Consoles

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Raised iconography and raised digits on console for all controls			✓		✓
Clear colour contrast of information from background display			✓		
Large font size for information (to be clarified in the future) in sentence case, not capitals.			✓		
Audio function available to provide feedback during and at the end of the exercise			✓		
Variable audible feedback for all programmable functions			✓		

Strength Training Equipment

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Enclosed weight stack meeting the requirements of EN957 Part 2 – for third party protection	✓	✓	✓		✓
Stability testing as per BSEN 957 Parts 2 Weight Machines and Part 4	✓	✓	✓		✓
Locking key weight selection mechanism	✓	✓	✓		✓
Weight selection pin to be tactile and have definite colour contrast to the weight stack			✓		✓
Raised tactile numbers on the weight stack			✓		
Following machine parts to have definite colour contrast from remainder of the machine: Seats - contrast against frame			✓		✓
Adjustment mechanisms			✓		✓

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Bar ends			✓		✓
Interfaces					✓
Adjustable start positions where necessary to prevent starting in a stressed position	✓	✓	✓		✓
Stability handles or points for use during functional exercise	✓			✓	

Strength Training Equipment

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Low start weight relevant to the piece of equipment	✓	✓			
Hand rails accessible to ensure that users are	✓	✓			

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
able to actively support their torso during activity					
Seating system independently moveable (e.g. swing away seat) or removable by wheelchair user wishing to exercise from their own chair for all upper body strength equipment		✓			

Strength Training Equipment

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Following machine parts to have definite colour contrast from remainder of the machine: Interfaces (such as karabiners)			✓		
Non-slip material for seating			✓		

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Pictorial representation of 'start' and 'finish' exercise positions on machine. Representation should be tactile, raised and have a definite colour contrast			✓		
Handles easy to change and adjustable with one hand (less fiddly than karabinas)	✓				✓
Maximum increments of 2.5 kg (at low weight values)	✓	✓			
Active and passive options available	✓				
Wider seat available for use by people with sitting balance problems. Recommend 15-20 inches but further guidance to follow	✓	✓			
Handles or surfaces available for transfer beside seats		✓			
Handles beside seat to be flush or below seat height		✓			
Bilateral access for transfer from a wheelchair or other mobility aid		✓			
Range of motion adjustment available		✓			

Pedal Crank Training Equipment

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Following machine parts to have definite colour contrast from remainder of the machine Pins			✓		✓
Seats - contrast against frame			✓		✓
Adjustment mechanisms			✓		✓
Handles			✓		✓
Interfaces (such as foot straps)			✓		✓
Visual feedback about performance at the end of the workout				✓	✓
Bilateral access for transfer from a wheelchair or other mobility aid		✓			

Pedal Crank Training Equipment

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Auditory feedback about performance at the end of the workout			✓		✓
Lockable pedal cranks to provide a solid base for adjusting straps and aligning limbs	✓	✓	✓	✓	✓
Wider seat available for use by people with sitting balance problems. Recommend 15-20 inches but further guidance to follow	✓	✓			
Foot straps available to stop users feet from falling off the pedals and ensure correct ankle, knee and hip alignment		✓			
Handles or surfaces available for transfer beside seats (recumbent cycles)		✓			
Handles beside seat to be flush or below seat height		✓			

Treadmills

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Distinctive marking on belt to allow user to determine if belt is moving			✓		✓
Visible contrast between the running belt and the casing					
Quick or single button start			✓		✓
Maximum 1kmph start speed		✓	✓	✓	✓
Low incremental changes in speed		✓	✓	✓	✓
Functional hand rails provided for a minimum one third the length of the training surface in a horizontal position (as per EN957 – Part 6)	✓	✓	✓	✓	✓
Rear roller guard or similar protection (as per EN957 – Part 6)			✓		
Visual feedback about performance at the end of the workout				✓	✓

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Guard rails provided for one third the length of the training surface (as per EN957 – Part 6)					✓
Bilateral access		✓			
Impact absorption system available		✓			
Centrally located emergency stop or emergency stops located on both the left and right hand sides of the equipment or kill cord or similar 'hands-free' option for emergency stop	✓	✓	✓	✓	✓

Treadmills

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Auditory feedback about performance at the start and end of the workout			✓		✓
Low level step on and off		✓			

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability

Upper Body Ergometers

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Following machine parts to have definite colour contrast from remainder of the machine: Seat - contrast against frame			✓		✓
Adjustment mechanisms			✓		✓
Interfaces (such as foot straps)			✓		✓
Handles			✓		✓
Visual feedback about performance at the end of the workout				✓	✓

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Seating system independently moveable (e.g. swing away seat) or removable by wheelchair user wishing to exercise from their own chair		✓			

Upper Body Ergometers

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Auditory feedback about performance at the end of the workout			✓		✓
Tactile adjustment of (pedal) arm crank length			✓		
Lockable interface to provide a solid base for adjusting straps and aligning limbs (lockable pedal cranks)					✓
Lockable pedal cranks to provide a solid base for adjusting straps and aligning limbs	✓				
Adjustable crank-arm (length of crank arm and height of point of rotation)	✓				
Wider seat available for use by people with sitting	✓	✓			

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
balance problems. Recommend 15-20 inches but further guidance to follow					
Handles or surfaces available for transfer beside seats		✓			
Handles beside seat to be flush or below seat height		✓			
Bilateral access for transfer from a wheelchair or other mobility aid		✓			

Rowing Machines

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Following machine parts to have definite colour contrast from the remainder of the machine:					

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Pins			✓		✓
Seat - contrast against frame			✓		✓
Handles			✓		✓
Interfaces (such as foot straps)			✓		✓
Adjustment mechanisms			✓		
Visual feedback about performance at the end of the workout				✓	✓
Bilateral access for transfer from a wheelchair or other mobility aid		✓			
Postural support compatible		✓			

Rowing Machines

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Auditory feedback about performance at the end of the workout			✓		✓
Simple lockable seat	✓	✓	✓		
Tactile direction marker on seat to allow user to know which direction they should be facing			✓		
Option for single arm use	✓				
Handles or surfaces available for transfer beside seats		✓			
Handles beside seat to be flush or below seat height		✓			
Wider seat available for use by people with sitting balance problems. Recommend 15-20 inches but further guidance to follow		✓			
Foot straps available to stop users feet from falling off the pedals		✓			

Stairclimbers and Steppers

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Visible contrast between the training surface and the casing			✓		✓
Definite colour contrast on handles and handrails			✓		
Lip around edge of each foot pedal EN957 Part 8 – only front/sides	✓	✓	✓	✓	✓
Visual feedback about performance at the end of the workout				✓	✓
Hand rails accessible to ensure that users are able to actively support their torso during activity	✓				

Stairclimbers and Steppers

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Dependent stepping action (i.e. no involuntary movement of the stepping surface when stepping onto the equipment)			✓		
Auditory feedback about performance at the end of the workout			✓		✓
Foot straps available to stop users feet from falling off the pedals		✓			
Hand rails accessible to ensure that users are able to actively support their torso during activity		✓			
Bilateral access for transfer from a mobility aid		✓			

Crosstrainers and Elliptical Trainers

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Visible contrast between the training surface and the casing			✓		✓
Definite colour contrast on handles and handrails			✓		
Lip around edge of each foot pedal EN957 Part 9 – only front/sides	✓	✓	✓	✓	✓
Visual feedback about performance at the end of the workout				✓	✓
Hand rails accessible to ensure that users are	✓				

Essential	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
able to actively support their torso during activity					

Crosstrainers and Elliptical Trainers

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Auditory feedback about performance at the end of the workout			✓		✓
Dependent stepping action (i.e. no involuntary movement of the stepping surface when stepping onto the equipment)			✓		
Bilateral access for transfer from a mobility aid		✓			

Desirable	Upper Body Impairment	Lower Body Impairment	Visual Impairment	Hearing Impairment	Learning Disability
Hand rails accessible to ensure that users are able to actively support their torso during activity		✓			

APPENDIX 19 - List of IFI accredited fitness equipment

List of IFI accredited Fitness Equipment

(Taken from www.inclusivefitnessinitiative.org)

Recumbent Bike

Model	Manufacturer
Perform Recumbent Cycle (250F)	Pulse Fitness
C846 Recumbent Cycle (IFI:C846R)	Precor Products Limited
C842 Recumbent Cycle (IFI:C842R)	Star Trac
XT Pro 600 Recline (D360)	Technogym UK ltd
Excite Recline 500 (D4663LN)	Technogym UK ltd
Excite Recline 500SP (D4664LN)	Technogym UK ltd
Excite Recline 700 (D4683LN)	Technogym UK ltd
Excite Recline 700SP (D4684LN)	Life Fitness
93R Recumbent Cycle (93R - IFI)	Life Fitness

Upper Body Ergometer

Model	Manufacturer
Sci-Fit Pro 1	EXF
Sci-Fit Pro II	EXF
Sci-Fit Pro 1000	EXF

Treadmill

Model	Manufacturer
Stairmaster 2100 Clubtrack Treadmill LCD (5m 00211-002)	Nautilus Health and Fitness Group UK Ltd
Ascent Treadmill (260F)	Pulse Fitness
Pro + Treadmill (530T)	Cybex International UK Ltd
Sport Treadmill (500T)	Cybex International UK Ltd
Excite Run 500 (D445ELN)	Technogym UK Ltd
Excite Run 700 (D447ELN)	Technogym UK Ltd
Excite Run 900 (D449ELN)	Technogym UK Ltd
93T Treadmill (93T - IFI)	Life Fitness
95Ti Treadmill (95Ti - IFI)	Life Fitness

Upper Body Multi Station

Model	Manufacturer
Upper Body Resistance Integra Single Variable Pulley (IFI-0306)	Powersport International Ltd
Upper Body Resistance Cable Crossover (345F)	Pulse Fitness
Multi-Station Low Pulley (390F)	Pulse Fitness
Upper Body Resistance Belt Column (342F)	Pulse Fitness
Upper Body Resistance Chest Press (311F)	Pulse Fitness
Upper Body Resistance Seated Row (447F)	Pulse Fitness
Upper Body Resistance Pec Deck (314F)	Pulse Fitness
Upper Body Resistance Lat Pulldown (381F)	Pulse Fitness
Upper Body Resistance Bench / Shoulder Press (301F)	Pulse Fitness
Multi-Station Syncro Cube (1810IFI)	Sportesse Sports Equipment Ltd
Upper Body Resistance Syncro Multi Chest (1805IFI)	Sportesse Sports Equipment Ltd
Upper Body Resistance Syncro Multi Shoulder (1806IFI)	Sportesse Sports Equipment Ltd
Upper Body Resistance Syncro Multi Pulldown (1808IFI)	Sportesse Sports Equipment Ltd
Upper Body Resistance Syncro Multi Low (1804IFI)	Sportesse Sports Equipment Ltd
Upper Body Resistance Syncro Multi Back High (1803IFI)	Sportesse Sports Equipment Ltd
Upper Body Resistance Easy Access Pec Deck Inc Chair (EA9160-IFI)	HUR (UK) Ltd

Upper Body Resistance Easy Access Lat Pull Inc Chair (EA9150-IFI)	HUR (UK) Ltd
Upper Body Resistance VR Overhead Press (4806 TA)	Cybex International UK Ltd
Upper Body Resistance H480 Access Trainer	Physique Ltd
Upper Body Resistance Integra Pec Deck (IFI-0301)	Powersport International Ltd
Upper Body Resistance Integra Lever Row (IFI-0304)	Powersport International Ltd
Upper Body Resistance Easy Access Chest Press Inc Chair (EA9140-IFI)	HUR (UK) Ltd
Multi-Station OMNI 3.33i (IFI-0501)	Powersport International Ltd
Upper Body Resistance Integra Chest Press (IFI-0303)	Powersport Inernational Ltd
Upper Body Resistance VR Row (4816 TA)	Cybex International
UK Ltd Upper Body Resistance VR Arm Curl (4821 TA)	Cybex International UK Ltd
Upper Body Resistance VR Lat Pull Down (4811 TA)	Cybex International UK Ltd
Upper Body Resistance VR Chest Press (4801 TA)	Cybex International UK Ltd
Upper Body Resistance Easy Access Delta / Lat Inc Chair (EA9130-IFI)	HUR (UK)Ltd
Upper Body Resistance Easy Access Tricep Press/Shrug Inc Chair (EA9125-IFI)	HUR (UK)Ltd
Upper Body Resistance Easy Access Push Up / Pull Down Inc Chair	HUR (UK)Ltd

(EA9120-IFI)	
Upper Body Resistance Easy Access Biceps / Triceps Inc Chair (EA9110-IFI)	HUR (UK)Ltd
Upper Body Resistance Multi Press (IFI-0302)	Powersport International Ltd
Upper Body Resistance Preacher Curl (IFI-0307)	Powersport International Ltd
Upper Body Resistance Integra Tricep Press (IFI-0308)	Powersport International Ltd

Leg Extension

Model	Manufacturer
Leg Extension (560F)	Pulse Fitness
SIII Leg Extension (1706IFI)	Sportesse Sports Equipment Ltd
Rehab Leg Extension / Leg Curl with RLD (5530-IFI)	HUR(UK) Ltd
Leg Extension / Leg Curl With Easy Access Hand Grips/Adjustable Lever Arms (3530	HUR (UK) Ltd
Leg Extension 11060 Eagle	Cybex International UK Ltd
Selection Line Leg Extension (M836)	Technogym UK Ltd

Leg Curl

Model	Manufacturer
Seated Curl (562F)	Pulse Fitness
SIII Seated Leg Curl (1751IFI)	Sportesse Sports Equipment Ltd
Rehab Leg Extension / Leg Curl with RLD (5530-IFI)	HUR (UK) Ltd
Leg Extension / Leg Curl With Easy Access Hand Grips/Adjustable Lever Arms (3530	HUR (UK) Ltd
Leg Curl 11050 Eagle	Cybex International UK Ltd
Selection Line Leg Curl (M810)	Technogym UK Ltd

Upper Body Ergometer with Lower Body Option Other

Model	Manufacturer
Lower Body Resistance Multi-Hip (515F)	Pulse Fitness
Lower Body Resistance Seated Leg Press (577F)	Pulse Fitness
Other Boso Balance Stand	Sportesse Sport Equipment Ltd
Lower Body Resistance Leg Press With Easy Access Hand Grips (3540-IFI)	HUR (UK) Ltd
Lower Body Resistance Rehab Adduction / Abduction With Easy Access Hand Grips (5520-IFI)	HUR(UK) Ltd

Access Aid Postural Support Seat	Concept 2
Access Aid Complimentary Balance Seat	Concept 2
Lower Body Resistance Thigh / Knee (IFI-0512)	Powersport International Ltd
Lower Body Resistance Thigh / Knee (IFI-0512)	Reach Wellness
Lower Body Resistance Selection Line Leg Press (M851)	Technogym UK Ltd
Other Aquabac White Water Consultancy Other Selection Line - Multi Hip (M867)	Technogym UK Ltd

Bikes

Model	Manufacturer
C842 Upright Cycle (IFI:C842U)	Precor Products Limited
Heart Rate Cycle (227F)	Pulse Fitness
C846 Upright Cycle (IFI:C846U)	Precor Products Limited
Pro Upright Cycle (UB6300 - IFI)	Star Trac
Excite Bike 500 (D4263LN)	Technogym UK Ltd
Excite Bike 500SP (D4264LN)	Technogym UK Ltd
Excite Bike 700 (D4283LN)	Technogym UK Ltd
Excite Bike 700SP (D4284LN)	Technogym UK Ltd
93C Upright Cycle (93C - IFI)	Life Fitness
95C Upright Cycle (95C - IFI)	Life Fitness

APPENDIX 20 – Information sheet and questionnaire for people with a physical impairment

Social and Public Health Sciences Unit
University of Glasgow
4 Lilybank Gardens
Glasgow
21/9/04

'Increasing Physical Activity among Disabled People in Glasgow'
MSc Research Project
Information Sheet

Dear Friend,

People in Glasgow are not currently doing enough physical activity to stay healthy. It is important that we look at ways of encouraging people to get more active. I am doing a research project at Glasgow University and intend to examine what the issues are for disabled people in relation to physical activity and how we can make it easier for people living in Glasgow with a physical impairment/disability to participate in physical activity.

This study would be greatly improved and far more useful if it were to include the views of individuals living in Glasgow with a physical impairment/disability. I am hoping that this information will help inform leisure and health providers about what is needed in Glasgow and help to change things so that there are more opportunities for people with physical impairments to take part in physical activity.

I am therefore sending you a questionnaire, which I would be grateful, if you, or you and your support worker could fill this in. This should take approximately 10 minutes to do. The questionnaire is designed to ask you about:

Your views on physical activity

- What benefits if any you think physical activity may have
- Whether or not you feel there are currently enough opportunities for you to do

physical activity in Glasgow.

All information collected will be dealt with in the strictest of confidence. All information provided would remain anonymous and details will not be passed onto any other organisation. Data may be used anonymously for research and teaching purposes.

Participation is entirely voluntary, you do not have to complete the form if you do not want to. If you do choose to fill in the questionnaire, I will take this as your permission for the information to be used in the study. If you have any questions or concerns, please feel free to contact my supervisor or myself using the contact details below. I have enclosed a prepaid envelope that can be used to return the questionnaire if you decide you would like to complete it.

I would like to thank you in advance for your help

Yours Sincerely

Julie L. Craik
Principal Researcher
4 Lilybank Gardens
University of Glasgow
Email:j.craik@ntlworld.com

Professor Nanette Mutrie
Project Supervisor
4 Lilybank Gardens
University of Glasgow
Telephone 0141357 7563
email:n.mutrie@bio.gla.ac.uk

Increasing Physical Activity among Disabled People in Glasgow'

Questionnaire

This questionnaire is designed to ask you about:

Your views on physical activity

What benefits if any you think physical activity may have

Whether or not you feel there are currently enough opportunities for you to do physical activity in Glasgow.

All data collected will remain anonymous and details will not be passed on to any other organisation. After question 3 you will only have to answer the questions in section A or B. This should take 5-10minutes to complete. If you return this questionnaire it will be taken as you giving your permission for the information to be used in this study.

About you

I am

Male ☐ Female ☐

Under 25 ☐ 25-34 ☐ 35- 44 ☐ 45-54 ☐ Over 55 ☐

Postcode (First part only required e.g. G61) _____

What is the nature of your impairment/disability?

Amputation ☐ Spinal cord injury ☐ Cerebral Palsy ☐

Stroke ☐ Spina Bifida ☐ Muscular Dystrophy ☐

Visual Impairment ☐ Hearing impairment/deaf ☐

Multiple Sclerosis ☐ Other (Please Specify) ☐

_____

SECTION A

Do you think you could benefit from increasing your levels of physical activity?

Not sure ☐

Yes ☐

No ☐ Please explain _____

_____

_____

If yes what benefits do you think you could get from participating in physical activity? (Tick all that apply)

Improve my fitness ☐

Opportunity to meet new people ☐

Feel good about myself ☐

Improve my strength ☐

Improve/maintain my ability to perform day to day tasks ☐

Help to maintain or lose weight ☐

Other (please specify) _____

Q3) Physical activity can be structured exercise such as an aerobics class or swimming or it can be leisure activity such as walking, dancing or bowling.

Which of these statements best describes you at the moment

I am not currently doing any physical activity and don't plan to	☐	**Go to section B page 10**
I am not currently doing any physical activity but have been thinking about doing some physical activity	☐	**Go to section B page 10**
I have just started doing some physical activity on a regular basis	☐	**Go to Q4**
I have been taking part in physical activity on a regular basis for more than 6 months	☐	**Go to Q4**
In the last 6 months I have been regularly taking part in physical activity but am not doing any at the moment	☐	**Go to Q4**

Q4a) Which of these types of physical activity do you do? (tick all that apply)

Structured exercise e.g. aerobics class	☐	Answer 4b,c,d
Leisure type activities e.g. boccia, horse riding	☐	Answer 5

If you have ticked both answer Q4b,c,d and Q5 before moving to Q6

Q4b) What type(s) of exercise do you do? (Enter as many activity types and activities as relevant into the table. An example has been given in bold at the top of the table)

1= Aerobic activity: Activity that is sustained over a period of time and results in increased heart rate and breathing e.g. walking, swimming, biking

2= Strength activity: Lifting weights or using elastic bands or weight training machines

3= Flexibility: Activities that involve muscle stretching

Activity Type (enter 1, 2 or 3)	Type of activity e.g. swimming	Number of days/week	Minutes per day
1	**Walking**	**3**	**20**

Q4c) Have you been exercising for more than 1 year or less than 1 year

More ☐ Less ☐

Q4d) Which of these best describes the intensity of your exercise programme?

Light exercise program where you don't sweat ☐

A moderate exercise program where you breathe a little harder and may possibly sweat ☐

A vigorous exercise program where you breathe hard and sweat, ☐

Q5) What type(s) of leisure activity do you do?

List activities below that you do for leisure or recreation. These activities can be done on a regular or irregular basis and may not necessarily result in sustained increases in heart rate and breathing rate. **Do not list activities here that you already listed under exercise.**

Type of activity e.g. Dancing	Number of days/week	Minutes per day

Q6) How many waking hours a day do you spend in your home (Please tick)?

	Less than 6	6-10	More than 10
Monday - Friday			
Saturday and Sunday			

Q7)On average, how many hours a day do you?

Sleep including naps _____

Sit or lie down (excluding sleep) _____

Q8) Are most of your indoor household activities done by:

You ☐ **Answer 8b**

Someone else ☐ **Go to Question 9**

Q8b) Please list all the household activities you do and the number of minutes a week you spend on each activity.

Type of activity e.g. Dusting	Minutes per day

Q9) Do you perform activities of daily living such as dressing and bathing:

Without assistance ☐

With some assistance ☐

With full assistance ☐

Q10a)Are you?

Employed ☐ **Answer 10b**

Not employed ☐

Retired ☐

Q10b) In your transportation to and from work, do you get any physical activity e.g. walking?

Yes ☐ No ☐

Q11a) Do you use a wheelchair?

Yes ☐ **Answer 11b, c, d**

No ☐ **Go to Q12**

Q11b) During the time that you are awake, do you spend:

All of the day in your wheelchair ☐

Most of the day in your wheelchair ☐

Just few hours a day in your wheelchair ☐

Q11c) Is your wheel chair manual or powered?

Manual ☐ How many minutes a day would you say you push yourself in your wheelchair _____

Powered ☐

Q12) How did you become involved in physical activity?

Parent/carer/Support worker encouraged me ☐

Through school ☐

Through friends ☐

Leisure centre advertisement ☐

I decided I wanted to ☐

Doctor/Physiotherapist advised me to ☐

Other (please specify) ☐

_____

Q13) Have you ever had problems/difficulties, which have stopped you doing physical activity?

Yes ☐ No ☐

If yes which of the following have you had difficulties with in the past or now? (Tick all that apply)

Poorly designed facilities ☐

Lack of appropriate equipment ☐

Lack of knowledge among staff about exercise and disabled people ☐

Lack of knowledge about what to do/what available ☐

Time ☐

Cost ☐

Health ☐

Travel difficulties ☐

Pain ☐

Self Consciousness ☐

Attitudes of those working within leisure facilities ☐

Please specify _____

Other (please specify) ☐

_____

Q14) How well do you think leisure facilities are designed to meet the needs of people with a physical impairment/disability?

Very well ☐

Reasonably well ☐

Not well at all ☐ Explain _____

_____

_____

Q15) Do you think there are enough chances for disabled people take part in physical activity in Glasgow?

Yes disabled people have the same chances as non-disabled people ☐

There are some but not as many as for other people ☐

Definitely not ☐

Do not know ☐

Q16) Do you think more is needed to enable people with physical disabilities/impairments become more active?

Yes ☐ No ☐

If yes which of these do you think would be useful?(tick all that apply)

Equipment suitable for those with physical impairments within leisure facilities ☐

Better trained staff ☐

More information available to individuals and their parents/carers about the benefits ☐

Specific exercise classes for people with a physical disability/impairment ☐

Assistance with transport ☐

Reduced costs for physical activity ☐

Exercise consultation (One to one chat with a trained physical activity counsellor) ☐

Other suggestions _____

_____

TIIANK YOU FOR YOUR HELP

Please return the questionnaire using the prepaid envelopes by --- 2004

SECTION B

Q1) Why are you not currently doing any physical activity?(tick all that apply):

I don't think I am able to ☐

I have never thought about doing any ☐

I do not want to ☐

Physical activity is not for disabled people ☐

I do not have the time ☐

Too expensive ☐

Do not know where to go ☐

Do not know what to do ☐

My disability/impairment makes it too difficult at the moment ☐

No-one to take me ☐

None of the above ☐

Other (please specify) ☐

Q2) Have you ever done physical activity in the past?

Yes ☐ No ☐

If yes why have you now stopped doing physical activity?

Got bored with it ☐

Transport difficulties ☐

Costs too much ☐

Impairment/disability got worse and had to stop for a while ☐

Had a break and never started again ☐

Class, facility, group no longer exists ☐

No-one to go with me ☐

Other reason (please specify) ☐

_____

_____

Q3) How many waking hours a day do you spend in your home (Please tick)?

	Less than 6	6-10	More than 10
Monday - Friday			
Saturday and Sunday			

Q4)On average, how many hours a day do you?

Sleep including naps _____

Sit or lie down (excluding sleep) _____

Q5a) Are most of your indoor household activities done by:

You ☐ **Answer 5b**

Someone else ☐ **Go to Question 6**

Q5b) Please list all the household activities you do and the number of minutes a week you spend on each activity.

Type of activity e.g. Dusting	Minutes per day

Q6) Do you perform activities of daily living such as dressing and bathing:

Without assistance ☐

With some assistance ☐

With full assistance ☐

Q7) Are you?

Employed ☐ **Answer 7b**

Not employed ☐

Retired ☐

Q7b) In your transportation to and from work, do you get any physical activity e.g. walking?

Yes ☐ No ☐

Q8a) Do you use a wheelchair?

Yes ☐ **Answer 8b, c, d**

No ☐ **Go to Question 9**

Q8b) During the time that you are awake, do you spend:

All of the day in your wheelchair ☐

Most of the day in your wheelchair ☐

Just few hours a day in your wheelchair ☐

Q8c) Is your wheel chair manual or powered?

Manual ☐ How many minutes a day would you say you push yourself in your wheelchair _____

Powered ☐

Q9) Have you ever experienced any problems/difficulties, which have stopped you doing physical activity?

Yes ☐ No ☐

If yes which of the following have you had difficulties with in the past or now?

Poorly designed facilities ☐

Lack of appropriate equipment ☐

Lack of knowledge among staff ☐

Own lack of knowledge about what to do/what available ☐

Time ☐

Cost ☐

Relying on someone else for travel/support ☐

Travel difficulties ☐

Attitudes of others (please specify) ☐

_____

Other (please specify)

Q10) Do you think there are enough chances for disabled people to take part in physical activity in Glasgow?

Yes disabled people have the same chances as others ☐

There are some but not as many as for other people ☐

Definitely not ☐

Not sure ☐

Q11) Do you think more is needed to enable people with physical disabilities/impairments become more active?

Yes ☐ No ☐

If yes which of these do you think would be useful?(tick all that apply)

Equipment suitable for those with physical impairments within leisure facilities ☐

Better trained staff ☐

More information available to individuals and their parents/carers about the benefits ☐

Specific exercise classes for people with a physical disability/impairment ☐

Assistance with transport ☐

Reduced costs for physical activity ☐

Exercise consultation One to one chat with a trained physical activity counsellor) ☐

Other suggestions ———————————————————

———————————————————

Q12) If you were to become physically active, where would you like your activity to take place?

In local leisure centres ☐

At home ☐

In a leisure facility specifically designed for disabled people only ☐

Don't know ☐

Other (please specify) ☐

_____

Any other comments _____

_____

_____

THANK YOU FOR YOUR HELP

Please return the questionnaire using the prepaid envelope by ---- 2004

APPENDIX 21 – Information sheet and questionnaire for parents/carers

Social and Public HealthSciences Unit
University of Glasgow
4 Lilybank Gardens
Glasgow
3/08/04

'Increasing Physical Activity among Disabled People in Glasgow'
MSc Research Project

Dear Friend,

Physical inactivity is a serious public health issue for people in Scotland. Nearly two thirds of the Scottish population are doing insufficient physical activity in order to benefit their health. Whilst the research is less well documented, that which does exist suggests that disabled people are less active than non-disabled people and therefore at greater risk of experiencing the negative health outcomes that arise from physical inactivity.

I am currently at Glasgow University and am doing a research project examining what the issues are for people with a physical impairments/disabilities in relation to physical activity participation and examining what could potentially be done in Glasgow to improve levels of participation.

I hope this may help to highlight particular issues in relation to physical activity participation in Glasgow and by informing planning structures, increase the opportunities available for disabled people to participate. I would like it if my study could reflect the views and experiences of individuals with physical impairments/disabilities and also parents/carers. In order to gather this information I am sending out questionnaires, which I would be most grateful if you could take the time to complete. The questionnaire is designed to ask you what your views are on a number of issues including:

- What you think about physical activity in relation to your son/daughter/person you care for.

- What benefits if any you think physical activity may have for them.
- Whether or not you feel there are currently enough opportunities for them to participate in physical activity.
- What you would like to see happen in the future.

All information collected will be dealt with in the strictest of confidence. All information provided will remain anonymous and details will not be passed onto any other organisation. Data may be used anonymously for research and teaching purposes.

Participation is entirely voluntary and whilst it would be helpful if you could take the time to complete the enclosed questionnaire, you do not have to do so. If you choose to return the questionnaire it will be assumed that you have given your consent for the information to be used for the purpose of this research. If you have any questions or concerns, please feel free to contact my supervisor or myself using the contact details below. I have enclosed a prepaid envelope that can be used to return the questionnaire if you decide you would like to complete it. I would ask that questionnaires are completed and returned by the 30th of September. The questionnaire should take approximately 10 minutes to complete.

I would like to thank you in advance for your help

Yours Sincerely

Julie L. Craik
Principal Researcher
4 Lilybank Gardens
University of Glasgow
Email:j.craik1@ntlworld.com

Professor Nanette Mutric
Project Supervisor
4 Lilybank Gardens
University of Glasgow
Telephone 0141357 7563

'Increasing Physical Activity among Disabled People in Glasgow'

Questionnaire for Parents and Carers

This questionnaire is designed to find out what your thoughts and feelings are around physical activity participation for your son/daughter/person you care for and any issues you or they have incurred in the past.

All data collected will remain anonymous and details will not be passed on to any other organisation. Participation is entirely voluntary. The questionnaire is in two parts; depending on your answer to question 4 you will be asked to continue with section A or move to section B. The questionnaire should take about 10 minutes to complete. Returning the questionnaire using the prepaid envelope will be taken as you consenting to the information being used as part of this research.

About you

I am

Male ☐ Female ☐

Under 25 ☐ 25-34 ☐ 35- 44 ☐ 45-54 ☐ Over 55 ☐

About your son/daughter/person you care for

They are

Male ☐ Female ☐

Under 16 ☐ Under 25 ☐ 25- 34 ☐ 35-44 ☐ Over 45 ☐

What is the nature of their impairment/disability?

Amputation ☐ Spinal cord injury ☐ Cerebral Palsy ☐

Stroke ☐ Spina Bifida ☐ Muscular Dystrophy ☐

Visual Impairment ☐ Hearing impairment/deaf ☐ Multiple Sclerosis ☐

Other ☐ Please Specify) _____

SECTION A

Q1) Which of these statements would you say most applies to you? (please tick)

I am not currently doing any physical activity and have no intention of doing so ☐

I am not currently doing any physical activity but have been thinking about becoming physically active ☐

I have recently started doing some physical activity on a regular basis ☐

I have been participating in physical activity on a regular basis for more than 6 months ☐

I have been regularly active in the last 6 months but am not doing any at the moment ☐

Q2) On a scale of 1-10 how important do you think physical activity is as a means of improving health? (1 = not very important 10=Very important) (Please circle)

1 2 3 4 5 6 7 8 9 10

Q3) Do you think physical activity could benefit your son/daughter/person you care for?

Yes ☐

No ☐ If no why not? _____

_____

If yes what benefits do you think your son/daughter/person you care for may gain from participating in physical activity? (Tick all that apply)

Improved fitness ☐

Opportunity to meet new people ☐

Improved self esteem and confidence ☐

Improved strength ☐

Improved/maintained ability to perform day to day tasks ☐

Weight loss/maintenance ☐

Other (please specify) ☐

Q4) Does your son/daughter/person that you care for do any physical activity at the moment?

Yes ☐ **Go to Q5**

No ☐ **If no go to Section B on page 7**

Q5) What type(s) of physical activity do they do? (Enter as many activity types and activities as relevant into the table. An example has been given in bold at the top of the table)

1= **Aerobic activity**: Activity that is sustained over a period of time and results in increased heart rate and breathing e.g. walking, swimming, biking

2= **Strength activity**: Lifting weights or using elastic bands or weight training machines

3= **Flexibility**: Activities that involve muscle stretching

Activity Type (enter 1, 2 or 3)	Type of activity e.g. swimming	Number of days/week	Minutes per day
1	**Walking**	**3**	**20**

Q6) Where do they go to take part in physical activity? (Please specify)

Local Leisure Centre ☐ (Please specify) _____

Community Centre ☐ Church Hall ☐ Hospital ☐

Other ☐ (Please specify) _____

Q7) What would you identify as the key barriers to participation in physical activity for those with physical impairments in Glasgow? (Tick all that apply)

Poorly designed facilities ☐
Lack of appropriate equipment ☐
Lack of knowledge among staff about exercise and disabled people ☐
Lack of knowledge about what to do/what available ☐
Time ☐
Cost ☐
Health ☐
Travel difficulties ☐
Pain ☐
Self Consciousness ☐
Attitudes of those working within leisure facilities ☐
Please specify _____
Other (please specify) ☐

_____

Q8) How well do you think leisure facilities are designed to accommodate the needs of people with a physical impairment/disability?

Very well ☐
Reasonably well ☐
Don't know I have not been in one recently ☐
Not well at all ☐
Explain _____

_____

Q9) What is your perception of the level of understanding/training among staff working in the leisure industry as to the needs of individuals with a physical impairment/disability?

Staff in local leisure centres definitely need more training around issues relating to disabled people ☐

Staff appear to have a general understanding but I feel they could do more ☐

The staff I have experienced seem to be well informed and accommodating ☐

Have too little experience to comment ☐

Q10) Do you think there are currently enough opportunities for disabled people to participate in physical activity in Glasgow?

Yes there are the same opportunities as for others ☐

There are some but more is needed to give disabled people the same opportunities as non disabled individuals. ☐

There are insufficient opportunities for disabled people in Glasgow ☐

Not sure ☐

Q11) Do you think more is needed in Glasgow to help people with physical disabilities/impairments become more active?

Yes ☐ No ☐

If yes which of these do you think is required (tick all that apply)

Equipment suitable for those with physical impairments within leisure facilities ☐

Better trained staff ☐

More information available to individuals and their parents/carers about the benefits ☐

Specific exercise classes for people with a physical disability/impairment ☐

Assistance with transport ☐

Reduced costs for physical activity ☐

Exercise consultation (one to one advice about physical activity) ☐

None of the above ☐

Other suggestions _____

_____

Any additional comments _____

_____

THANK YOU FOR YOUR HELP

Please return the questionnaire in the prepaid envelope by the .....

SECTION B

Q1) Has your son/daughter/person you care for, ever participated in physical activity?

Yes ☐ No ☐

Q2) Which of the following if any are reasons why your son/daughter/person you care for is not involved in physical activity?

They chose not to be ☐

They used to be but stopped as an adult ☐

I have never considered it as an option for them ☐

There are few opportunities in our area ☐

Their impairment/disability prevents it ☐

Costs too much money ☐

The timings of the opportunities don't suit ☐

Other (please specify) ☐

_____

Q3) How well do you think leisure facilities are designed to accommodate the needs of people with a physical impairment/disability

Very well ☐

Reasonably well ☐

Don't know I have not been in one recently ☐

Not well at all ☐

Explain _____

Q4) Has your son/daughter/person you cared for, ever experienced any barriers to participation

Yes ☐

No ☐ Go to Q5

If yes what barriers have they faced (tick all that apply)

Poorly designed facilities ☐

Lack of appropriate equipment ☐

Lack of knowledge among staff about exercise and disabled people ☐

Lack of knowledge about what to do/what available ☐

Time ☐

Cost ☐

Health ☐

Travel difficulties ☐

Pain ☐

Self Consciousness ☐

Attitudes of those working within leisure facilities ☐

Please specify _____

Other (please specify) _____ ☐

Q5) What is your perception of the level of understanding/training among staff working in the leisure industry as to the needs of individuals with a physical impairment/disability?

Staff in local leisure centres definitely need more training around issues relating to disabled people ☐

Staff appear to have a general understanding but I feel they could do more ☐

The staff I have experienced seem to be well informed and accommodating ☐

Have too little experience to comment ☐

Q6) Do you think there are currently enough opportunities for disabled people to participate in physical activity in Glasgow?

Yes there are the same opportunities as for other ☐

There are some but more is needed to give disabled people the same opportunities as non disabled individuals. ☐

There are insufficient opportunities for disabled People in Glasgow ☐

Not sure ☐

Q7) Do you think more is needed to help people with physical disabilities/impairments become more active?

Yes ☐ No ☐

If yes which of these do you think is required (tick all that apply)

Equipment suitable for those with physical impairments within leisure facilities ☐

Better trained staff ☐

More information available to individuals and their parents/carers about the benefits ☐

Specific exercise classes for people with a physical disability/impairment ☐

Assistance with transport ☐

Reduced costs for physical activity ☐

Exercise consultation (one to one advice about physical activity) ☐

None of the above ☐

Other suggestions _____

_____

Any other comments _____

_____

THANK YOU FOR YOUR HELP

Please return the questionnaire in the prepaid envelope by the 30th September

APPENDIX 22 – Information sheet and questionnaire for Glasgow City Council leisure staff

Social and Public Health Sciences Unit
University of Glasgow
4 Lilybank Gardens
Glasgow
Date

'Increasing Physical Activity among Disabled People in Glasgow'
MSc Research Project
Leisure Staff Information Sheet

Dear Friend,

Physical inactivity is a serious public health issue for people in Scotland. Nearly two thirds of the Scottish population are doing insufficient physical activity in order to benefit their health. Whilst the research is less well documented, that which does exist suggests that disabled people are less active than non-disabled people and therefore at potentially greater risk of experiencing the negative health outcomes that arise from physical inactivity.

I am a part time student at Glasgow University and am currently doing an MSc by research. My research looks to examine the issues facing disabled people in relation to physical activity participation and highlight what is needed in Glasgow to increase the physical activity levels among disabled people, particularly those with a physical disability.

Part of my research will examine the perceptions and experiences of individuals with physical disabilities/impairments and parents/carers in relation to physical activity participation. To complement this I would like to address the experiences, training needs and views of staff currently working within local leisure facilities. I would therefore like to take this opportunity to ask for your assistance and ask if you could take 5-10 minutes to complete the enclosed questionnaire.

All information collected will be dealt with in the strictest of confidence. All information provided would remain anonymous and details will not be passed onto any other organisation. Data may be used anonymously for research and teaching purposes.

Participation is entirely voluntary. If you do choose to complete the questionnaire this will be seen as you giving your consent for the information to be used as part of the study. If you have any questions or concerns, please feel free to contact my supervisor or myself using the contact details below. I have enclosed prepaid envelopes that can be used to return the questionnaire. I would ask that questionnaires are returned by (date to be decided)

I would like to thank you in advance for your help

Yours Sincerely

Julie L. Craik
Principal Researcher
4 Lilybank Gardens
University of Glasgow
Email:j.craik1@ntlworld.com

Professor Nanette Mutrie
Project Supervisor
4 Lilybank Gardens
University of Glasgow
Telephone 0141357 7563
email:n.mutrie@bio.gla.ac.uk

Increasing Physical Activity among Disabled People in Glasgow'

Questionnaire for Staff

This questionnaire has been designed to establish:
Your experience of dealing with disabled customers
What training you have had in the past
Any training needs you feel you have in relation to disabled people
How well you think existing facilities are designed to accommodate the needs of disabled people in relation to physical activity participation.

This information will be used for the purpose of my study, however it is hoped that it may be useful to leisure providers and identify what staff would like/need in relation to this issue.

All data collected will remain anonymous and details will not be passed on to any other organisation. Participation is voluntary. Please answer Q1-9. Section B, Q10- Q13 should be answered by only those delivering physical activity sessions to individuals with a physical disability/impairment. Returning this questionnaire using the prepaid envelope will be taken as you giving consent to use the information. This questionnaire should take 5-10 minutes to complete.

Section A

Q1) Which area of the facility do you work? (please tick)

Poolside ☐

Gym ☐

Reception ☐

Other ☐ (Please specify)

Q2) How often are you in contact (e.g. speaking to or dealing) with disabled customers (tick only one)?

Daily (1 person or more on at least 4 days of the week) ☐

Weekly (1 person or more on 1-3 days of the week) ☐

Monthly (1 person or more at least once a month) ☐

Not very often at all (less than 1 person a month) ☐

Q3) Do you think disabled people can benefit from participation in physical activity?

Yes ☐

No ☐ Please explain _____

_____

c) Don't know ☐

Q4) Have you ever undergone specific staff training around the issue of disability?

Yes	☐	Please answer Q4b, Q4c and Q4d
No	☐	Go to Q5
No but I have been offered it	☐	Go to Q5
Can't remember	☐	Go to Q5

Q4b) What did your training cover (list topics or specific courses 1-2 examples)?

_____

_____

Q4c) Who delivered the training?

Centre manager	☐
Training officer within facility	☐
Glasgow City Council disability sports team	☐
Outside Provider e.g. YMCA, Centre for independent living	☐

Please specify _____

Q4d) When did you undergo this training?

Last 6 months ☐

In the last year ☐

Sometime in the past 2 years ☐

More than 2 years ago ☐

Can't remember ☐

Q5) Would you like more training around the issue of disability?

Yes ☐

No ☐ **Go to Q6**

If yes what form would this training take?

Disability equality training ☐

Manual handling ☐

Issues for specific impairments/disabilities ☐

Physical activity for disabled people e.g. YMCA course ☐

Other (please specify) ☐

_____

_____

Q6) Do you know what facilities are available in the centre you work that can be utilised by disabled people?

Yes ☐ (Give 2 examples if possible) _____

_____

No ☐

Q7) Do you know what activity programmes/sessions are available to disabled people within the centre you work?

Yes ☐ Give 2 examples if possible) _____

_____

No ☐

Q8) How well do you think the leisure facilities in which you work is designed to accommodate the needs of disabled people?

Don't know ☐

Very well ☐

Reasonably well ☐

Not well at all ☐ Explain _____

_____

Q9) Do you think there are currently enough opportunities for disabled people to participate in physical activity in Glasgow?

Yes there are the same opportunities as for others ☐

There are some but more is needed to give disabled people the same opportunities as non disabled individuals. ☐

There are insufficient opportunities for disabled People in Glasgow ☐

Don't feel I know enough to answer ☐

THANK YOU FOR YOUR HELP

Please return the questionnaire using the prepaid envelope by the (Date to be decided).

Thank you once again

If you deliver programmes to disabled people please answer Section B

SECTION B

PLEASE ONLY ANSWER Q10-13 IF YOU ARE CURRENTLY INVOLVED IN DELIVERING SESSIONS TO INDIVIDUALS WITH A PHYSICAL DISABILITY/IMPAIRMENT

Q10) Please indicate what activities you deliver to individuals with a physical disability?

Swimming programme ☐

Gym programme (CV and MC) ☐

Relaxation and stretching ☐

Game based programme e.g. basketball, boccia ☐

Other _____

_____

Q11a) Have you undergone specific training course(s) around delivering these types of programmes to disabled people?

Yes ☐ Please answer 11b

No ☐ Please answer 11d

Q11b) Do you feel this training gave you adequate knowledge and skills to deliver sessions to disabled individuals?

Yes ☐ Please answer

No ☐ Please answer 11c

In places ☐ Please answer 11c

Q11c) What would help you to feel more confident in delivering sessions to disabled people/ someone with a specific impairment?

_____

_____

_____

Q11d) Would you find a training course on this useful?

Yes ☐ No ☐

Q12) Have you ever experienced any difficulties with the facility design or equipment when delivering sessions?

Yes ☐ Please indicate what difficulties you have experienced

_____

_____

_____

No ☐

Q13) Have you ever experienced any other difficulties when delivering sessions?

Yes ☐ Please indicate what difficulties you have experienced

_____

_____

_____

No ☐

THANK YOU FOR YOUR HELP

Please return the questionnaire using the prepaid envelope by the (Date to be decided). Thank you once again